INFORMATION TECHNOLOGY DEPARTMENT

POLICY NOTE
DEMAND NO. 31

2017 – 2018

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Minister for Information Technology

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Government of Tamil Nadu

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CHAPTER - I

INTRODUCTION

Information Technology is today driving economies and businesses worldwide. Due to the revolution in Information Technology and Communications & Electronics and the fast pace at which changes are happening, the sector has become crucial for all countries which wish to grow and prosper rapidly.

Tamil Nadu continues to be a destination of choice for the Information Technology (IT) / Information Technology Enabled Services (ITES) sector in India. It has effectively leveraged the skills of its human resources to achieve this distinction in the IT/ITES sectors such as Banking, Financial Services and Insurance (BFSI), Health Systems Management, Computer Aided Designing (CAD) and Computer Aided Engineering (CAE).

The Tamil Nadu Vision 2023 document released by Hon'ble Chief Minister states that,

"Tamil Nadu will nurture a culture of responsive and transparent Governance that ensures progress, security and equal opportunity to all stakeholders."

As far as Good Governance is concerned, Tamil Nadu is a role model for the other States in India. Good Governance is about processes for making and implementing decisions, ensuring delivery of public services in a speedy, reliable and transparent manner.

To achieve the above vision, Tamil Nadu has been using the information infrastructure in a dynamic manner, so as to facilitate speedy access to information and deliver various services of the Government in a faster and efficient manner to the citizens.

The Information Technology Department was set-up with the twin aims of providing support to the growth of the IT Industry of the State as well as ensuring the development of e-Governance. The Department's role has undergone continuous changes with the addition of several projects, schemes and services including providing Cable TV services, Tamil Computing, IT Training to students, Entrepreneurs, etc.

The objectives of the Information Technology Department are to:-

- ❖ **enhance the quality of life of citizens through Information and Communication Technology;**
- ❖ **provide appropriate support for the growth of the Information, Communication and Electronic Industries in the State;**
- ❖ **bridge the digital rural-urban divide;**

- ❖ **substantially increase the Software exports of Tamil Nadu;**

- ❖ **make Tamil Nadu, the Best State in IT enabled Governance;**

- ❖ **provide Government services, both informational and transactional, to Citizens, at their door steps through Internet;**

- ❖ **provide Cable TV services & internet broadband services to all households at reasonable rates;**

- ❖ **provide Tamil Education through the web and take Computing in Tamil to a higher level.**

CHAPTER - II

ELECTRONICS CORPORATION OF TAMIL NADU LIMITED (ELCOT)

2.1 Introduction

Electronics Corporation of Tamil Nadu Limited (ELCOT), a Company registered on 21.03.1977 under the Indian Companies Act of 1956 has been providing services from November 1982.

It is primarily involved in promoting Information Technology (IT) and Information Technology Enabled Services (ITES) industries in the State and in providing technical assistance to various Government Departments and Organizations in the State in the field of IT related procurement, e-governance and IT services.

ELCOT is the Optional Procurement Agency of the Government for IT hardware

procurement, software development, major turnkey IT projects of the Government of Tamil Nadu and nodal agency for major IT infrastructure projects of the Ministry of Electronics and Information Technology (MeitY), Government of India. All the major IT infrastructure projects in the State such as Tamil Nadu State Wide Area Network (TNSWAN), Tamil Nadu State Data Centre (TNSDC), Cloud computing facility and Tamil Nadu Disaster Recovery Center (TNDRC) have been executed by ELCOT.

2.2 Promotion of Information Technology Industry: ELCOT Special Economic Zones (ELCOSEZs)

ELCOT has established 8 Special Economic Zones (SEZs) for development of IT/ITES in Tier-I and Tier-II cities as per the policy decision of the Government of Tamil Nadu at Chennai,

Coimbatore, Madurai (2 places), Tiruchy, Salem, Tirunelveli and Hosur.

From the above 8 Special Economic Zones, 68,900 direct employment and 1,37,800 indirect employment have been created. In the year 2015-16, software exports from these ELCOSEZs was **Rs.17,266 crore.**

2.2.1 ELCOSEZ-Sholinganallur, Chennai

In Chennai, Sholinganallur village, an ELCOSEZ has been established by ELCOT at an extent of 377.08 acres. All infrastructure works and an administrative building with an extent of 6,358 sq.ft. have been completedwith an investment of Rs.43.26 crore. ELCOT has made a total investment of Rs.195.35 crore in this ELCOSEZ.

Details of land allotment to IT / ITES companies on lease basis are as follows:-

Sl. No.	Name of the Company	Extent Allotted (in Acres)	Constructed IT Building (in Sq.Ft.)	Status of Operation with No. of Employees	
1.	M/s. WIPRO	80	27 lakh	19,000	
2.	M/s. HCL	50	22 lakh	18,000	
3.	M/s. Satyam	50	6.25 lakh	4,200 (2 lakh sq.ft. IT Building is under construction)	
4.	M/s. Sutherland Global Services Ltd.	15	Construction of IT building is under progress		
5.	M/s. Cognizant Technology Solutions Limited	20	28 lakh	18,000 seating capacity and in operation with 12,000 employees.	
6.	M/s. Ford Motor Private Limited	28	Co-developer approval has been obtained and the construction of 26,06,291 sq.ft building is under progress.		

Figure 1

2.2.2 ELCOSEZ - Vilankurichi, Coimbatore

In Coimbatore, Vilankurichi village, an ELCOSEZ has been established by ELCOT at an extent of 62 acres of land. All infrastructure works have been created with an investment of Rs.19 crore, and a 3,524 sq.ft. administrative building has been constructed with an investment of Rs.1.22 crore, which was inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 23.5.2017. ELCOT has made a total investment of Rs.72.50 crore in this ELCOSEZ.

Details of land allotment to IT / ITES companies on lease basis are as follows:-

Sl. No.	Name of the Company	Extent Allotted (in Acres)	Constructed IT Building (in Sq.Ft.)	Status of Operation with No. of Employees
1.	M/s. WIPRO	9.5	3.5 lakh	2,000
2.	M/s. TIDEL Park Coimbatore Limited	9.5	17 lakh	9.14 lakh sq.ft. has been used as IT space. Presently, 8.39 lakh sq.ft. has been occupied by 50 IT / ITES companies and is in operation with more than 11,000 employees. In the balance space, a 952 seater Development Centre has been set up in 70,000 sq.ft., and fully allotted to 28 IT / ITES companies.

Figure 2

2.2.3 ELCOSEZ - Ilandhaikulam, Madurai

In Madurai, Ilandhaikulam village, an ELCOSEZ has been established by ELCOT at an extent of 28.91 acres. All infrastructure works and an administrative – cum - IT building with an extent of 50,000 sq.ft. have been completed with an investment of Rs. 26 crore. ELCOT has made a total investment of Rs.34.41 crore in this ELCOSEZ.

Details of land allotment to IT / ITES companies on lease basis are as follows**:-**

Sl. No.	Name of the Company	Extent Allot-ted (in Acres)	Construc-ted IT Building (in Sq.Ft.)	Status of Operation with No. of Employees
1.	M/s. Honeywell Technologies Limited	11.25	50,000	600
2.	M/s. Chella Software Private Limited	2.25	Ready for commencement	
3.	M/s. HCL Infosystems Ltd.	6.75	5,00,000	Construction commenced

Built up space has been allotted in ELCOT's 50,000 sq.ft. IT building on rental basis to the following IT/ITES companies:-

Sl. No.	Name of the Company	Extent Allotted (in Sq.Ft.)	Status of Operation with No. of Employees
1.	M/s. Galaxy Infotech	2,508	30
2.	M/s. AMBC Technologies Pvt. Limited	3,277	15
3.	M/s. Sai BPO Services Limited	15,181	310
4.	M/s.Neeyamo Enterprises Solutions Private Limited	30,120	250
5.	M/s. CVIAC Consulting	9,136	Ready for commencement

In this ELCOSEZ, 100% of land on lease basis and built-up space on rental basis have been allotted by ELCOT.

Figure 3

2.2.4 ELCOSEZ- Vadapalanji, Madurai

In Madurai, Vadapalanji village, an ELCOSEZ has been established by ELCOT at an extent of 245.17 acres. Government of India has accorded SEZ approval for 213 acres of land in this ELCOSEZ. Infrastructure works have been completed with an investment of Rs.14.99 crore. The construction of Rail-over-Bridge with an estimated cost of Rs.18 crore and an administrative – cum - IT building with an extent of 50,000 sq.ft. at an estimated cost of Rs.21.13 crore are under progress. ELCOT has made a total investment of Rs.63.73 crore in this ELCOSEZ.

Details of land allotment to IT / ITES companies on lease basis are as follows:-

Sl. No.	Name of the Company	Extent Allotted (In acres)
1.	M/s. HCL	60
2.	M/s. SATYAM	50
3.	M/s. Sutherland Global Services Ltd.	5

4.	M/s. Chain-Sys. Software Exports (P) Ltd.	20
5.	M/s. Empire Photovoltaic Systems Pvt. Ltd., Chennai.	25 (Non SEZ area)
6.	M/s. Caliber Point	5
7.	M/s. Health Plan Systems (India) Pvt. Ltd.	2
8.	M/s. Cogzidel Technologies Pvt. Ltd.	2

2.2.5 ELCOSEZ - Navalpattu, Tiruchirapalli

In Tiruchirapalli – Navalpattu village, an ELCOSEZ has been established by ELCOT at an extent of 147.61 acres. Government of India has accorded SEZ approval for 123.23 acres of land in this ELCOSEZ. All infrastructure works and an administrative – cum - IT building with an extent of 50,000 sq.ft. have been completed with an investment of Rs.33.21 crore. ELCOT has made a total investment of Rs. 60 crore in this ELCOSEZ.

Details of land allotment to IT / ITES companies on lease basis are as follows:-

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Sl. No.	Name of the Company	Extent Allotted (in Acres)
1.	M/s.WNS Global Services Private Ltd.	5
2.	M/s. iLink Multitech Solutions Pvt. Ltd.	2
3.	M/s. HCL Infosystems	2 (Non SEZ area)
4.	M/s. Sutherland Global Services Ltd.	10
5.	M/s. Assyst International Pvt. Ltd.	3
6.	M/s. Zylog Systems Limited	5
7.	M/s. Unlimited Innovations India Pvt. Ltd.	5
8.	M/s. Vdart Technologies	2
9.	M/s. Health Plan Systems (India) Pvt. Ltd.	2

100% of built-up space has been allotted in ELCOT's 50,000 sq.ft. IT building on rental basis to the following IT / ITES companies :-

Sl. No.	Name of the Company	Extent Allotted (in Sq.Ft.)	Status of Operation with No. of Employees
1.	M/s. iLink Systems Pvt. Ltd.	6,668	80
2.	M/s. Scientific Publishing Company	30,381	1,300
3.	M/s. Vuram Technology Solutions Pvt. Ltd.	5,976	40

4.	M/s. Vdart Technologies	3,643	60
5.	Disaster Recovery Centre	5,963	15
6.	M/s. GI Tech Gaming Co. India Pvt. Ltd.	4,919	Ready for commence-ment
7.	M/s. VR Della IT Services Pvt. Ltd.	2,541	Ready for commence-ment

Figure 4

2.2.6 ELCOSEZ - Gangaikondan, Tirunelveli

In Tirunelveli, Gangaikondan village, an ELCOSEZ has been established by ELCOT at an extent of 500 acres. Government of India has accorded SEZ approval for 290 acres of land in this ELCOSEZ. All infrastructure works have been completed for 100 acres with an

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investment of Rs.13.56 crore and an administrative – cum - IT building with an extent of 50,000 sq.ft. has been completed with an investment of Rs. 16 crore. ELCOT has made a total investment of Rs. 55.22crore in this ELCOSEZ.

Details of land allotment to IT / ITES companies on lease basis are as follows:-

Sl. No.	Name of the Company	Extent Allotted (In acres)
1.	M/s. Syntel International Private Limited	100
2.	M/s. Sutherland Global Services Limited	10
3.	M/s. A & D Cosmic Power	25 (Non SEZ area)
4.	M/s Decaan I Services	2

M/s. Syntel International Private Ltd. has obtained the Co-developer status for 100 acres and the construction of 2.60 lakh sq.ft. IT building has been completed. It will commence production shortly.

Figure 5

2.2.7 ELCOSEZ - Jagirammapalayam, Salem

In Salem, Jagirammapalayam village, an ELCOSEZ has been established by ELCOT at an extent of 164.26 acres. Initially, the infrastructure works for 53.33 acres and an administrative–cum–IT building with an extent of 50,000 sq.ft. have been completed with an investment of Rs.29.32 crore. This administrative–cum-IT building was inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 23.5.2017. ELCOT has made a total investment of Rs.34.60 crore in this ELCOSEZ.

Details of land allotment to IT / ITES companies on lease basis are as follows:-

Sl. No.	Name of the Company	Extent Allotted (in Acres)
1.	M/s. dB Professionals	3
2.	M/s. Vee Technologies	9.49
3.	M/s. Mahima Technologies Pvt. Ltd.	3
4.	M/s. GTP Infotech Solutions Ltd.	2.5
5.	M/s. Sennovate Infotech Pvt. Ltd.	1.25

M/s. Vee Technologies has obtained the Co-developer status for construction of IT facility. The construction of the IT facility at an extent of 20,000 sq.ft. has been partially completed and production has commenced with 250 employees.

Figure 6

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2.2.8 ELCOSEZ - Viswanathapuram, Hosur

In Hosur, Viswanathapuram village, an ELCOSEZ has been established by ELCOT at an extent of 174.47 acres. All infrastructure works have been completed with an investment of Rs.19 crore. The construction of 50,000 sq.ft. administrative – cum - IT building at an estimated cost of Rs.21 crore is nearing completion. ELCOT has made a total investment of Rs.41.74 crore in this ELCOSEZ.

Details of land allotment to IT / ITES companies on lease basis are as follows:-

Sl. No.	Name of the Company	Extent Allotted (In acres)
1.	M/s. OkayaInfocom Pvt. Ltd.	10
2.	M/s. CRM IT Solutions Pvt. Ltd.	3
3.	M/s. CRM Infotech India Pvt. Ltd.	2

Figure 7

2.3 Start-Up Warehouse

2.3.1 Start-Up Warehouse at Chennai

In order to build entrepreneurial capabilities and to give impetus to start-ups, a Start-up Warehouse with 90 seater capacity has been established in 6,860 sq.ft. rental space at a cost of Rs.3,53,15,800/-in the first floor of Tidel Park, Chennai with NASSCOM as the knowledge Partner.

Figure 8

2.3.2 Start-Up Warehouse at Coimbatore

The Hon'ble Chief Minister of Tamil Nadu announced on 23.9.2016 that a 64 seater

capacity Start-up Warehouse will be established at an estimated cost of Rs.2.07 crore at Tidel Park Coimbatore Ltd., Coimbatore with NASSCOM as the knowledge Partner. The establishment of the Start-up Warehouse is under progress.

2.4 IT TOWER at ELCOSEZ – Sholinganallur

The Hon'ble Chief Minister of Tamil Nadu announced on 23.9.2016 that an Information Technology Tower will be established in Sholinganallur ELCOSEZ, Chennai with an extent of 2 lakh sq.ft with a total investment of Rs.80 crores for the establishment of IT/ITES business by small and medium entrepreneurs in Chennai.

2.5 Rural Business Process Outsourcing (RBPO) Centres

An Enhanced Rural BPO Policy was released by the Government to train and employ rural youth from very poor socio-economic background in order to prevent migration of

youth to the cities and to shift the focus of the BPO industry in rural areas.

Capital subsidy of 20% would be provided on capital investments such as cost of hardware, equipments etc., subject to a maximum of Rs.5 lakhs and training subsidy of Rs.2.25 lakhs to each Rural BPO Centre.

As announced by the Hon'ble Chief minister, M/s. Sutherland Global services Ltd. (BPO company) has set-up a 50 seater Rural BPO Centre in Navalur – Kuttapattu village, Srirangam in Tiruchirappalli District based on the guidance and coordination by ELCOT.

2.6 Procurement

Government has nominated Electronics Corporation of Tamil Nadu Limited (ELCOT) as the Optional Procurement Agency for all Government Departments to procure IT related products and services. ELCOT is procuring and

supplying IT hardware like servers, desktop computers, laptop computers, printers, scanners, UPS, projectors, smart phones, IT consumables and all the network devices at competitive prices with latest configuration to various departments.

ELCOT also procures and supplies Internet Protocol (IP) camera surveillance system and special products like vehicle monitoring system, telemedicine equipments, etc.

ELCOT is supplying all kinds of IT products to the major Departments such as Revenue & Disaster Management, Survey & Settlement, Economics & Statistics, Transport, Rural Development & Panchayat Raj, Forest, Health & Family Welfare, Agriculture, School Education, Higher Education, Commercial Tax & Registration, Pollution Control Board, Greater Chennai Corporation, Tamil Nadu Arasu Cable TV

Corporation Ltd (TACTV), Madras High Court and all other Courts in Tamil Nadu, TNeGA, etc.

2.7 Scheme for Distribution of Laptop Computers

The Government of Tamil Nadu is implementing the scheme for distribution of priceless laptop computers to the students studying in Government and Government-aided schools and colleges in the State to facilitate them in acquiring better computer skills. The scheme was inaugurated by the Hon'ble Chief Minister on 15.09.2011.

In Phase I, 8,98,866 laptop computers were procured and supplied in the year 2011-12. In Phase II, 7,56,000 laptop computers were procured and supplied in the year 2012-13. In Phase III, 5,65,000 nos. of laptop computers were procured and supplied in the year 2013-14.

In Phase IV & V (2014-15 and 2015-16), 10,16,028 nos. (Phase IV - 4,96,999 nos. and

Phase V- 5,19,029 nos.) of laptop computers were procured and supplied.

In Phase – VI, 20,210 nos. of laptop computers were supplied from the balance laptops procured in the year 2015-16 and for the balance requirement of 5.16 lakh laptop computers, supply would commence from July 2017.

2.8 e-Governance Department

ELCOT's e-Governance Department provides end-to-end software solutions for Government Departments in implementing e-Governance projects in order to deliver seamless, transparent and efficient services to the citizens and effect significant reduction in the processing time. In addition to that, it also coordinates with various Government Departments and the selected vendors from the stage of finalizing the System Requirement Study (SRS) till the successful implementation of

the projects. ELCOT also offers the Facility Management Services (FMS) to the departments for the applications made operational through the selected vendors.

Some of the prominent projects executed by the ELCOT's e-Governance Department are listed below:

1. Online Lift Licensing System and Generator Tax Collection System was implemented for the Electrical Inspectorate.

2. A web portal and State Skill Registry System was implemented for Tamil Nadu Skill Development Corporation (TNSDC). Students can register online and avail training from the 250+ training providers. Also, private employers can find the skilled resources through this portal.

3. A web portal was implemented for Directorate of Industrial Safety and Health

(DISH). Issue of license online to the industries is carried out through this portal.

4. Electronic solution for "Automated Building Plan Scrutiny and Approval System" was implemented for Directorate of Town and Country Planning (DTCP). It verifies all the parameters available in the DCR (Development Control Regulation) of DTCP, Municipal and Panchayat rules. It has gone live from September 2016.

2.8.1 Websites created for Tamil Nadu Government Departments

Some of the major websites created by ELCOT for Government Departments are as follows:

- Conservation Authority of Pallikaranai Marshland

- Tamil Nadu Forest Department

- Tamil Nadu Horticulture Department

- Finance (BC) Department

- Tamil Nadu Infrastructure Development Board

- Adi Dravidar Welfare Board

2.8.2 Permanent Enrolment Centres (PECs)

Unique Identification Authority of India (UIDAI) has appointed ELCOT as an Enrolment Agency for providing Aadhaar Enrolment and other related services in Tamil Nadu. ELCOT has established 215 Permanent Enrolment Centres across Tamil Nadu in various locations as listed below and these are operational with effect from 3rd October 2016.

- District Collectorates – 32

- Municipal Corporation Headquarters except Chennai– 11

- Municipalities – 124

- Town Panchayats – 2

- Revenue Divisional Office – 1

- Municipal Corporations Zonal Office - 45

- Aadhaar enrolment count as on 15.06.2017 is 7,07,987 (online & offline)

2.9 Information Technology Infrastructure

Information Technology (IT) infrastructure in the State provides the backbone for the latest e-Governance and other IT related initiatives in the State. IT infrastructure in the State comprises the Tamil Nadu State Data Centre (TNSDC), Tamil Nadu State Wide Area Network (TNSWAN), Cloud Computing, Internet Connectivity, Tamil Nadu Disaster Recovery Centre, National Knowledge Network (NKN), etc. Tamil Nadu is one of the few States in India to have successfully implemented the SDC, Cloud computing and SWAN initiatives.

IT infrastructure in the State include the following components functioning within an integrated framework to provide seamless online services to various Government Departments.

➢ TNSWAN

  ❖ Vertical Connectivity

  ❖ Horizontal Connectivity

  ❖ Redundant Connectivity

➢ National Knowledge Network (NKN)

➢ Internet Leased Line and Multi Protocol Label Switching (MPLS)

➢ Tamil Nadu State Data Centre (TNSDC)

➢ Server Farm

➢ Disaster Recovery Centre (DRC) and Near Line DRC (NLDRC)

➢ Cloud Infrastructure at TNSDC

➢ e-Mail Solution

2.9.1 Tamil Nadu State Wide Area Network (TNSWAN)

State Wide Area Network is one of the core e-Governance infrastructure created under the National e-Governance Plan (NeGP). It is a

shared scheme between the State and Centre. Phase-I operations (01.12.2007 to 30.11.2012) at an estimated cost of Rs.140.25 crore were shared by both Centre and the State (Govt. of India share - Rs.55.73 crore, State share - Rs.84.52 crore). Phase II operations (09.09.2013 to 08.09.2016) at an estimated cost of Rs.74.69 crore were wholly funded by the State. Now, TNSWAN is under interim period operations.

a) TNSWAN Vertical Connectivity

TNSWAN core network has 708 nodes (POPs - Points of Presence), which were created at the Secretariat, Raj Bhavan, DGP Office, Commissionerate of Police, Greater Chennai Corporation, Government Complexes such as DPI, DMS, Ezhilagam, Panagal Building and Kuralagam at Chennai and at the Collectorates, Revenue Divisional Offices, Taluk offices and Block Development Offices. This network provides a link to all the Government

Departments by providing voice, data and video connectivity for improving the delivery of services to the public, for improving the response time and transparency and to enable the Government Departments to access their servers hosted at TNSDC. The Build, Own, Operate and Transfer (BOOT) operation of the network was completed on 30.11.2012. The 3 year Phase-II operations commenced on 09.09.2013 and completed on 08.09.2016 and the network is currently under interim operations. Service Level Agreement (SLA) is being adhered in vertical connectivity on 24x7 basis.

The following services are provided to Government Departments through TNSWAN:-

1. Secured Intranet Application Access
2. Secured Internet Access
3. Closed User Group Voice Services
4. Video Conferencing Services

TNSWAN and NKN have been integrated at District Head Quarters (DHQ) level as per the guidelines of the Government of India. With this integration, the bandwidth at DHQ has been upgraded to 34 Mbps / 100 Mbps / 1 Gbps as per the requirements.

b) Horizontal Connectivity

Government offices have been connected to TNSWAN POPs for availing intranet facility for rolling out the Department's applications that are hosted at TNSDC. The intranet services such as voice, data, internet, video conferencing, etc. have been provided. Horizontal Connectivity has also been made available through TNSWAN Points of Presence (PoPs) to Government Departments.

So far, Horizontal Connectivity has been provided to more than 5000 offices of Government Departments namely, Commercial Taxes, Tamil Nadu Water Supply and Drainage

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Board (TWAD), Tamil Nadu Health Systems Project (TNHSP), Treasuries & Accounts, Registration, Employment & Training, Forest, Transport, Tamil Nadu e-Governance Agency (TNeGA), State Health Society, Tamil Nadu Housing Board (TNHB), Survey and Settlement, Tamil Nadu Cement Corporation Limited (TANCEM), Tamil Nadu Civil Supplies Corporation, etc.

c) Redundant Connectivity

TNSWAN vertical connectivity is provided to all District Collectorates, Taluk Offices, Revenue Divisional Offices, and Block Development Offices by using the bandwidth provided by NKN/BSNL. In order to ensure uninterrupted connectivity to these offices, a secondary 2 Mbps MPLS-VPN (1:1) Redundant Connectivity has been implemented. Provisioning for 210 links has been established.

2.9.2 National Knowledge Network (NKN)

National Knowledge Network (NKN) is a national level high speed network established by Government of India. NKN provides a common platform to the Scientists, Researchers, Doctors, Scholars and Students to work together for advancing human development by connecting the Academic Institutions across India and the Global Scientific Community.

The bandwidth through NKN is being provided by Bharat Sanchar Nigam Limited (BSNL), Power Grid Corporation of India Limited (PGCIL) and RailTel. NKN also provides network platform for National e-Governance Plan (NeGP) projects for their roll out at the national level. The NKN consists of an ultra-high speed core, starting with multiple 2.5/10 Gigabits per second and progressively moving towards 40/100 Gigabits per second (Gbps) connectivity.

Two links of 1 Gbps speed from NKN have been terminated, one each at TNSWAN and TNSDC with 100 Mbps Internet connectivity.

Through the NKN connectivity, TNSWAN and TNSDC users can also access the applications that are hosted at the national level. The applications can be accessed through NKN at a very high speed Internet bandwidth, which is several times faster than the earlier speed.

2.9.3 Internet Leased Line and Multi Protocol Label Switching (MPLS)

Internet leased line connectivity is being offered at various speeds varying from 1 Mbps to 100 Mbps speed to the Departments dealing with large amount of dynamic data. At present, leased line connectivity is being provided to various Departments such as Metro Water, Greater Chennai Corporation, Directorate of

Rural Development, Archaeology, Tamil Nadu Pollution Control Board, etc.

MPLS connectivity is being offered at various speeds varying from 256 Kbps to 8 Mbps at spoke end and 2 Mbps to 100 Mbps as aggregation link as a Redundant Connectivity to TNSWAN or direct link to the Departments. MPLS connectivity is being provided to various Departments such as Tamil Nadu Housing Board, Treasuries and Accounts, Commercial Tax, etc.

2.9.4 Tamil Nadu State Data Centre (TNSDC)

a) Tamil Nadu State Data Centre - 1

Tamil Nadu State Data Centre (TNSDC) is one of the core e-Governance backbone infrastructure of the State. It is a shared scheme between State and Centre at a cost of Rs.60.80 crore (Centre share - Rs.55.80 crore & State share - Rs.5 crore). It is in operation since 01.08.2011. Tamil Nadu is the first State in the

country to obtain the ISO certification for the Data Centre Operations and the Management of Information Security which is an important milestone in the operation of TNSDC. TNSDC is a highly secured infrastructure in which the Government Departments can host their applications. TNSDC has now obtained upgraded ISO Certifications ISO/IEC 20000-1:2011 and ISO/IEC 27001:2013.
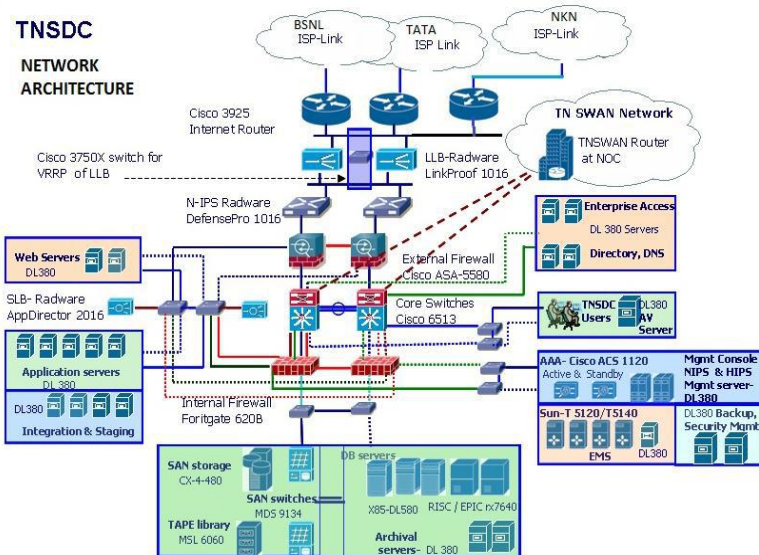
Figure 9

TNSDC is housed at ELCOT, Perungudi Complex and is being maintained with a strict Service Level Agreement (SLA) for ensuring 24 X 7 operations. The TNSDC was set up with 63 racks and is in the consecutive 6th successful year of operation.

Figure 10: Tamil Nadu State Data Centre 1

81 applications of 25 Government Departments are live from the TNSDC-1. Some of the Government Applications which are operational are as follows:-

1. HMS & HMIS of Tamil Nadu Health Systems Project

2. e-Governance and e-District Applications of SSDG

3. Crime and Criminal Tracking Network Systems (CCTNS)

4. e-Payment System of IGR

5. Enterprise Resource Planning (ERP) of Greater Chennai Corporation

6. Document Management System of Chennai Metro Rail Project

7. College Management System of Dr.MGR Medical University

8. Enterprise Resource Planning (ERP) for Priceless Fan, Mixie, Grinder and Priceless Laptop Scheme, etc.

b) Tamil Nadu State Data Centre - 2

The TNSDC-1 is serving the hosting requirements of various Government Departments and has reached 100% of its

maximum capacity in terms of space. Hence, the TNSDC -2 in a new building at Perungudi is being implemented at an approved project outlay of Rs.40 Crore. Construction of building work is nearing completion and selection of Data Centre Operator (DCO) for establishment, supply, commissioning, operation and management of TNSDC-2 is in progress. TNSDC-2 will become operational by January 2018.

Figure 11: Tamil Nadu State Data Centre 2

2.9.5 Server Farm

In order to provide a common test bed facility like Load Balancer, Antivirus, Firewall,

etc. to the Departments while hosting applications at TNSDC, a 'Server Farm' has been created at TNSDC with necessary hardware, software and testing tools. This allows the Departments to comply with Vulnerability Assessment and Penetration Tests before hosting the applications at TNSDC.

2.9.6 Disaster Recovery Centre (DRC) & Near Line DRC (NLDRC)

a) Disaster Recovery Centre -Trichy

The Tamil Nadu State Data Centre (TNSDC) enables the State Government and the Departments to host their applications and services on a common, redundant, secured and controlled environment and thereby eases the process of integration and resource optimization. However, risk pertaining to natural disasters such as Tsunami, earthquakes, floods, etc. pose a herculean challenge to any Data Centre and hence to ensure the business continuity of the

Departments which are providing e-services and to have a mirror image of data, a Disaster Recovery Centre has been planned. ELCOT has been nominated as the implementing agency for setting up of the Disaster Recovery Centre (DRC) in a phased manner.

The Disaster Recovery Centre Operator for supply, installation, configuration, testing, operations and management of the Disaster Recovery Centre (DRC) at ELCOSEZ, Trichy was selected through open tender process at Rs.53.28 crore. Commissioning of IT and non-IT equipments are in progress.

b) National Data Centre, Pune

Under the National Disaster Recovery Scheme, the TNSDC is mapped with National Data Centre (NDC), Pune. Through NKN connectivity, NDC, Pune was enabled as the Disaster Recovery (DR) Centre. DR at NDC, Pune is operational and DR facilities of Crime and Criminal Tracking Network Systems (CCTNS)

and State Health Data Resource Centre (SHDRC) have been implemented at NDC, Pune.

c) Near Line Disaster Recovery Centre (NLDRC)

To address the synchronous replication requirements and for providing Near Line Disaster Recovery solutions, ELCOT has entered into a Memorandum of Understanding (MoU) with BSNL Data Centre.

Near Line Disaster Recovery common IT infrastructure has been created by ELCOT at BSNL Data Centre. The requirements of the Departments are being addressed on a case to case basis on receipt of demands from the Departments.

2.9.7 Cloud Infrastructure at Tamil Nadu State Data Centre(TNSDC)

Cloud Technology has been adopted at TNSDC which facilitates optimal utilization of IT infrastructure. This Technology enables

consolidation of IT resources and leads to power saving.

Cloud set-up has been established in TNSDC through M/s.C-DAC and M/s.Sify Technologies Ltd. As on date, 22 applications are deployed successfully in the Cloud environment and public access is enabled. Cloud services are being provided based on the needs of Government Departments.

Figure 12: Cloud Infrastructure at TNSDC - 1

2.9.8 e-Mail Solutions

The provisioning of e-Mail Services is an essential component of the functioning of Government. In order to provide seamless

desktop connectivity as wellas to adhere to the regulations with respect to storage and archival of e-Mail as official record of business processes, a full fledged e-Mail solution has been launched under the URL "mail.tn.gov.in".

2.10 Financial Performance

The Land Lease Deposits received from the IT Companies for 99 years' lease of lands in the Special Economic Zones developed by Electronics Corporation of Tamil Nadu Limited are treated as annual income at the following rates:-

1. First Year   -   15%
2. Second Year   -   Nil
3. Third Year   -   Nil
4. Fourth Year to 17th Year   -   5%
                                                   per annum
5. Balance 15% is refunded to the IT Companies upon completion of the Lease Period.

The financial performance of ELCOT for the year 2011-12 to 2016-17 is tabled below:-
(Rupees in Lakhs)

Description	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (Unaudited)
Income						
Sales	811.79	837.43	853.17	891.51	930.82	863.16
Services	445.34	621.49	907.22	1432.75	842.52	728.16
Others	2542.59	2897.36	3400.54	4155.64	10157.63	5792.09
Total Income	**3799.72**	**4356.28**	**5160.93**	**6479.90**	**11930.97**	**7383.41**
Expenditure						
Administration	1235.27	1326.47	1508.90	1686.75	1712.48	1668.00
Depreciation	318.25	241.86	326.68	409.92	552.27	552.27
Finance Cost (Interest on Govt. Advances)	872.38	809.45	1111.16	1134.52	1034.55	788.70
Others	828.88	919.58	550.28	625.65	1107.69	1092.84
Total Expenditure	**3254.78**	**3297.36**	**3497.02**	**3856.84**	**4406.99**	**4101.81**
Profit	**544.94**	**1058.92**	**1663.91**	**2623.06**	**7523.98**	**3281.60**
Amount paid to Govt.						
Interest/Nomination	698.33	796.91	1109.29	1132.65	1032.69	786.84
Dividend	0.00	0.00	777.92	777.92	1772.24	*0.00
Total Amount paid to Govt.	**698.33**	**796.91**	**1887.21**	**1910.57**	**2804.93**	**786.84**

*Dividend will be declared after the finalisation of Accounts at the Annual General Meeting.

Chapter - III

COMMISSIONERATE OF e-GOVERNANCE
AND
TAMIL NADU e-GOVERNANCE AGENCY

3.1 Introduction

Tamil Nadu e-Governance Agency (TNeGA) and the Commissionerate of e-Governance aim to fulfil the vision of Good Governance through use of Information Technology in e-Governance and electronic delivery of services to public at their doorsteps as envisaged in the "Vision Tamil Nadu 2023" document.

The Commissionerate of e-Governance has been established with the objective of leading the e-Governance initiatives of the State Government and implementing ICT projects across the State. The Commissionerate is also coordinating the delivery of electronic services by the State Government.

Tamil Nadu e-Governance Agency (TNeGA), as a State Nodal Agency supports all e-Governance initiatives of the State Government and also play an advisory role. TNeGA is implementing various e-Governance projects with the objective of making all Government services, wherever feasible, accessible to the common man in an efficient and transparent manner.

Some of the important projects under implementation by TNeGA include e-District, e-Sevai Centres in Rural and Urban areas, Capacity Building (CB) in Information and Communication Technology (ICT) & Tools, Geographical Information System (GIS), State Resident Data Hub (SRDH), State Services Delivery Gateway (SSDG), etc.

3.2 Institutional Framework

The Institutional Framework available for e-Governance activities at State level is as follows:-

3.2.1 State Apex Committee

The implementation of Mission Mode Projects (MMP) of National e-Governance Plan (NeGP) at all levels of Government is driven by the Apex committee headed by the Chief Secretary to Government. It oversees and provides policy direction to State e-Governance initiatives and MMPs and ensures Intra and Inter Departmental co-ordination. It is supported by the **State e-Governance Group (SEG)** for providing standardization and consistency through Programme Management of the e-Governance initiatives.
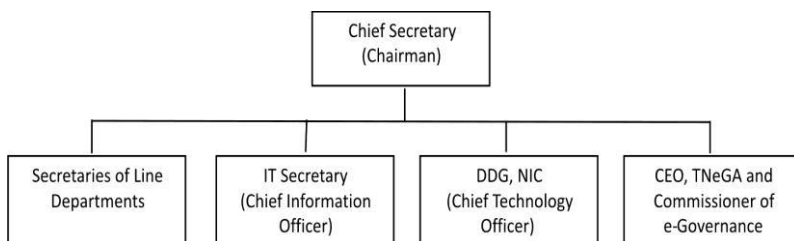
Figure 13: Apex Committee (TNeGA)

3.2.2 Commissionerate of e-Governance

As more and more Departments are implementing ICT projects, it is essential to strengthen the organizations that are acting as nodal departments / agencies in e-Governance to guide, standardize and implement an integrated secured IT environment. This role is being performed by the Commissionerate of e-Governance.

To meet the above need, an IT Cadre has been sanctioned by Government with 2 Joint Directors (Technical), 5 Senior System Analysts / Senior System Engineers, 20 System Analysts / System Engineers, 60 Assistant System Analysts / Assistant System Engineers under the Technical Wing along with an Administrative Wing consisting of 1 Deputy Director (Admin) now upgraded as Joint Director, 1 Superintendent, 1 Accounts Officer, 2 Assistants, 2 Junior Assistants, 2 Office Assistants and 2 Sanitary Workers. Under the Technical Wing, the

feeder category would be Assistant System Analyst / Assistant System Engineer.

As regards the way forward, Special Rules for IT Cadre posts, viz. Tamil Nadu Information Technology Service Rules have been approved by the Government and orders were issued in G.O.(Ms).No.9, Information Technology (Admn.1) Department, dated 14.6.2017. Necessary action is being taken to fill-up the posts as per these Special Rules.

3.2.3 Tamil Nadu e-Governance Agency (TNeGA)

The Tamil Nadu e-Governance Agency is an autonomous Society under the regulations of the Registrar of Societies, Tamil Nadu. The Governing Board consists of 14 members with Principal Secretary to Government, Information Technology Department as the Chairman, Chief Executive Officer, TNeGA as Member Secretary and State Informatics Officer, National Informatics Centre, Chennai as Chief Technical

Officer and the Secretaries of the following 11 Mission Mode Departments as members to guide the Tamil Nadu e-Governance Agency in its e-Governance activities and deliver the services to citizens:-

1. Finance Department
2. Commercial Taxes & Registration Department
3. Agriculture Department
4. Social Welfare and Nutritious Meal Programme Department
5. Health and Family Welfare Department
6. Rural Development and Panchayat Raj Department
7. Revenue and Disaster Management Department
8. Home Department
9. Municipal Administration and Water Supply Department
10. Co-operation, Food & Consumer Protection Department
11. School Education Department

3.2.4 Organisational Structure and IT Cadre

The following chart depicts the organizational structure of the Commissionerate of e-Governance (CeG)/ Tamil Nadu e-Governance Agency:
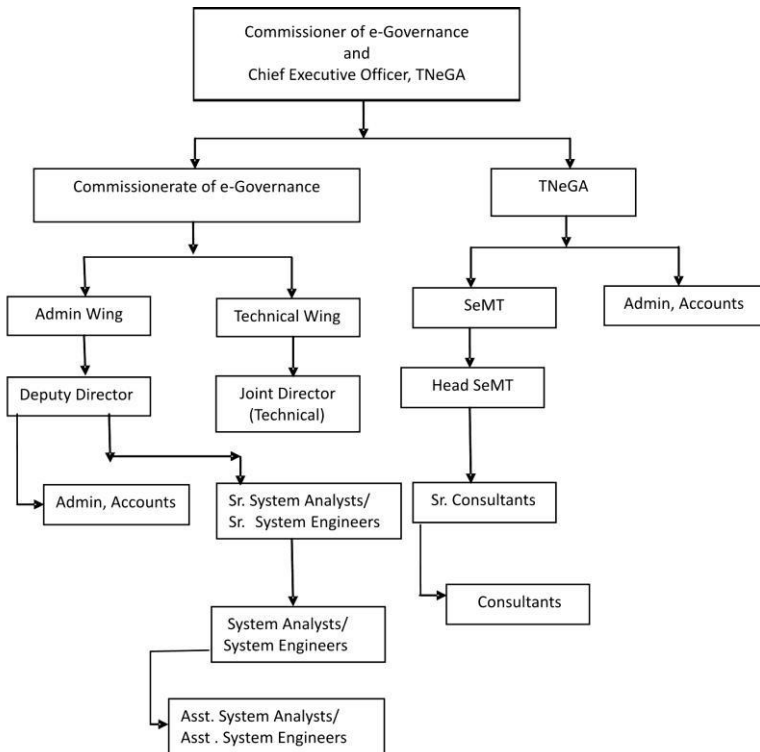
Figure 14: Organizational Structure of CeG/TNeGA

3.2.5 State e-Governance Mission Team (SeMT)

A State e-Governance Mission Team (SeMT) is deployed in TNeGA. It comprises a group of IT Consultants in Programme Management, Technology Management, Financial Management and Change Management areas. The SeMT Consultants are handholding the Departments in their e-Governance initiatives and support the implementation of Mission Mode Projects (MMPs) of NeGP. The Consultants act as an internal advisory body to the State Government Departments and help them to create department level ICT Roadmap and awareness.

3.2.6 District e-Governance Society (DeGS)

The Government have ordered the formation of District e-Governance Societies (DeGS) in all the Districts for implementing the e-Governance projects. Accordingly, District

e-Governance Societies (DeGS) have been formed in all the Districts. The District e-Governance Society is headed by the District Collector, except in Chennai, where the Commissioner, Corporation of Chennai is the Head. The District level officials of all service delivery Departments are the members of the Society. The DeGS is responsible for the implementation of the ICT projects at District level. The DeGS plays a key role in the post-implementation and operations of the e-Governance Programme at District level.

For smooth functioning of the DeGS, a sum of Rs.10 lakh has been provided by the Government as seed money assistance to each DeGS. Apart from this, they can avail themselves of a share of the revenue received through service delivery.

3.3 Various Projects of Tamil Nadu e-Governance Agency

3.3.1 e-District Programme

e-District is one of the State Mission Mode Projects (MMP) under National e-Governance Plan (NeGP), which aims at electronic delivery of identified high volume citizen centric services through 'Arasu e-Sevai Centers', by leveraging the common infrastructure of SWAN, SDC, and SSDG.

Tamil Nadu was one of the pilot States identified by the Government of India for implementation of e-District project. Accordingly, the project was initiated in the State wherein software application was developed for offering the services of Scholarship Schemes of BC/MBC/DNC Welfare Department and AD&TW Department through online, from the respective Institutions. Further, 5 Revenue Certificate Services, 7 services of

Social Welfare Department and 7 Pension Schemes were also included in the e-District Suite. e-District Project was initially implemented in 6 pilot Districts viz., Ariyalur, Coimbatore, Krishnagiri, Perambalur, Tiruvarur and The Nilgiris with the assistance of NIC. Consequent to successful pilot implementation, these services have been rolled out to the remaining 26 Districts in the State and as of now, about 49 services developed by NIC are being delivered online under this project.

Apart from the above, a System Integrator for e-District roll out has been selected and 69 services of various Departments have been identified for implementation. As of now, about 48 services are being delivered online and the remaining 21 Services are in UAT / Security Audit. Apart from this, 68 services are offered through APNA CSC Portal. In total,165 services

are now being delivered online to the public through e-District programme.

List of services offered through e-District Portal:

S. No.	Department	Services Name
1.	Revenue & Disaster Management Department	Income Certificate
2.		Nativity Certificate/ Residence Certificate
3.		Community Certificate
4.		No Graduate Certificate
5.		Deserted Woman Certificate
6.		Birth Certificate for Revenue Villages
7.		Death Certificate for Revenue Villages
8.		Indira Gandhi National Disability Pension Scheme
9.		Indira Gandhi National Old Age Pension Scheme
10.		Indira Gandhi National Widow Pension Scheme
11.		Destitute Deserted Wives Pension Scheme
12.		Destitute Widow Pension Scheme
13.		Physically Handicapped Pension Scheme
14.		Unmarried Women Pension Scheme
15.		Tamil Nilam – Extract of A-Register
16.		Tamil Nilam – Extract of Chitta
17.		Tamil Nilam – Full Field Patta Transfer
18.		Tamil Nilam – Joint Patta Transfer
19.		Tamil Nilam – Subdivision

20.		Grievance Day Petition
21.	Social Welfare and Nutritious Meal Programme Department	MoovalurRamamirthamAmmaiyarNinaivu Marriage Assistance Scheme
22.		AnnaiTerasaNinaivu Orphan Girl Marriage Assistance Scheme
23.		EVR ManiammaiyarNinaivu Widow Daughter Marriage Assistance Scheme
24.		Dr. Muthulakshmi Reddy NinaivuIntercaste Marriage Assistance Scheme
25.		DharmambalAmmaiyarNinaivu Widow Re-marriage Assistance Scheme
26.		Chief Minister's Girl Child Protection Scheme- I
27.		Chief Minister's Girl Child Protection Scheme- II
28.	Civil Supplies Department	Consumer complaint other than PDS
29.		Consumer complaint related to PDS
30.	Registration Department	Application through Offline Payment
31.		Printing of Challan for Offline Payment
32.		Online appointment for Marriage/Document registration
33.		Printing Acknowledgement for Appointment
34.	Transport Department	Booking Appointment for Driving license
35.		Learner's Licence Online application
36.		Reprint of Leaner's Licence Online application
37.	Police Department	CSR Status
38.		FIR Status
39.		Online Complaint Registration
40.		Status Viewing
41.		Vehicle Search

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42.	Adi-Dravidar & Tribal Welfare Department	GoI Post-matric Scholarship for SC Students
43.		GoI Post-matric Scholarship for ST Students
44.		State Special Scholarship for Post-matric Students
45.		Higher Education Special Scholarship Scheme
46.	Backward Classes, Most Backward Classes & Minorities Welfare Department	Issuance of Post-matric Scholarship
47.		Educational Assistance to Students in Professional Courses
48.		Educational Assistance to Graduates
49.		Educational Assistance to Polytechnic Students

List of services offered through e-Sevai Portal:

S.No	Department	Services Name
1.	Directorate of Boilers	Registration of License under Boilers Act
2.		Renewal of Licence under Boilers Act
3.	Commissionerate of Municipal Administration	Collection of Non-Tax items
4.		Collection of Professional Tax
5.		Collection of Property tax
6.		Collection of Underground Drainage Charges
7.		Collection of Water Charges
8.	Chennai Metro Water Supply & Sewerage Board	Water and Sewerage Tax
9.	Greater Chennai Corporation	Printing of Birth Certificate
10.		Printing of Death Certificate
11.		Renewal of Trade License

12.		Collection of Company Tax
13.		Collection of Professional Tax
14.		Collection of Property Tax
15.	Directorate of Fire & Rescue Services	NOC for MSB compliance
16.		NOC for MSB Planning Permission
17.		NOC for Non-MSB Planning Permission
18.		MSBFire Licence Registration andRenewal
19.		Non-MSB Fire Licence Registration and Renewal
20.	Revenue & Disaster Management Department	Income Certificate
21.		Nativity Certificate
22.		Community Certificate
23.		No Graduate Certificate
24.		Deserted Women Certificate
25.		Family Migration Certificate
26.		Agricultural Income Certificate
27.		Widow Certificate
28.		Unemployment Certificate
29.		Certificate for Loss of Educational Records
30.		Two Female Child Certificate or No Male Child Certificate
31.		Unmarried Certificate
32.		Inter-Caste Marriage Certificate
33.		Legal Heir Certificate
34.		Solvency Certificate

35.		Residence Certificate
36.		License under Pawn Broker Act
37.		Money Lender's License
38.		Other Backward Class (OBC) Certificate
39.		Small / Marginal Farmer Certificate
40.	TANGEDCO	Electricity Bill Payment
41.		RegistrationofNew LT Connection
42.		Payment forNew LT connection
43.	Anna University	TN Engineering Admission - Online Registration
44.	Civil Supplies Department	Apply forNew Family Card
45.		Alterations to the Family Card- Additionof Family Members, Change of Address / Card Type / Cylinder count / Family Head Member, Modify / Remove Family Member details, change of Beneficiary Photo
46.	Employment & Training	Printing of RegistrationID
47.		Application for Renewal
48.	TNeGA	PDS- AADHAR Integration

The 68 Services being offered through APNA CSC Portal include - 3 Agricultural Services, 9 B2C Services, 9 Education related Services, 3 Election Services, 9 G2C Services, 2 Insurance Services, 4 Mobile and DTH Services, 2 Recruitment Services, 4 Travel Services, 5 UID Services, 9 Skill Services, 4 Banking Services and 5 Training Courses.

Consequent to the Announcement made by the then Hon'ble Chief Minister under Rule 110 that **"In addition to the services now offered through CSCs, 300 more services will be offered through e-District programme"**, work order was issued to a System Integrator. Functional Requirement Specification (FRS) preparation is under progress in consultation with the concerned departments.

3.3.2 Arasu e-SevaiCentres

The Government, realizing the basic needs of the common man, has taken steps to provide Government Services in electronic mode to the common man in his locality through Arasu e-Sevai Centres. As of now, the Arasu e-Sevai Centres are delivering e-District services and as well as other services that are useful to the common man. Considering the usefulness of the Rural CSCs, the Scheme has been extended to urban areas also. Arasu e-Sevai Centres are functioning in urban areas with the objective of providing unified access to e-services of different Government Departments at a common point in the urban and semi-urban areas of the State.

Arasu e-Sevai centres run by Tamil Nadu Arasu Cable TV Corporation (TACTV), Primary Agricultural Co-operative Credit Societies (PACCS), Village Poverty Reduction Committees (VPRCs) formed under PudhuVazhvu Project,

Village Level Entrepreneurs (VLEs) and International Fund for Agricultural Development (IFAD) are delivering the e-services.

The Pilot for the Urban Arasu e-Sevai Centres Scheme was launched in Chennai by the then Hon'ble Chief Minister of Tamil Nadu on 24.02.2014 in the following 14 places:-

Taluk Offices	3
Corporation of Chennai (Zonal Offices)	3
Chennai Metro Water Supply & Sewerage Board (CMWSSB) Depots	2
Urban Co-operative Credit Societies	6

Currently, there are 11,117 centres with 11,636 counters functioning across the State. The breakup details are given below:

S.No.	Service Centre Agency	No. of Centres	No. of. Counters
1.	Tamil Nadu Arasu Cable TV Corporation Ltd.(TACTV)	844	1,268
2.	Primary Agricultural Co-operative Credit Societies (PACCS)	4,381	4,381
3.	Village Poverty Reduction Committee (VPRC)	4,261	4,356

4.	International Fund for Agricultural Development (IFAD)	7	7
5	Village Level Entrepreneurs (VLEs)	1,624	1,624
	TOTAL	**11,117**	**11,636**

The Number of Transactions made under the e-District Programme are given below:-

Sl. No	Financial Year	Transactions (e-District)	Apna CSC	EPIC	Total
1.	2011-2012	83,046	-	-	83,046
2.	2012-2013	1,98,353	-	-	1,98,353
3.	2013-2014	9,85,353	-	-	9,85,353
4.	2014-2015	24,75,890	-	-	24,75,890
5.	2015-2016	1,10,10,387	20,27,137	-	1,30,37,524
6.	2016-2017	1,16,33,436	41,79,825	11,31,046	1,69,44,307
7.	2017-2018 (01.04.2017 to 31.05.2017)	18,91,815	4,87,650	2,50,153	26,29,618
	Total	**2,82,78,280**	**66,94,612**	**13,81,199**	**3,63,54,091**

3.3.3 State Portal / State Services Delivery Gateway (SSDG)

The State Portal is a one-stop access to Tamil Nadu Government Information and e-Services. The State Portal provides features

like integration of e-District services, Content Management System, links to all Department services, mobile compliance, citizen registration etc.

The Portal has been tested thoroughly by Standardization, Testing and Quality Certification (STQC) for functionality, performance and security. This was inaugurated by the then Hon'ble Chief Minister on 24.02.2014. It is being implemented successfully.
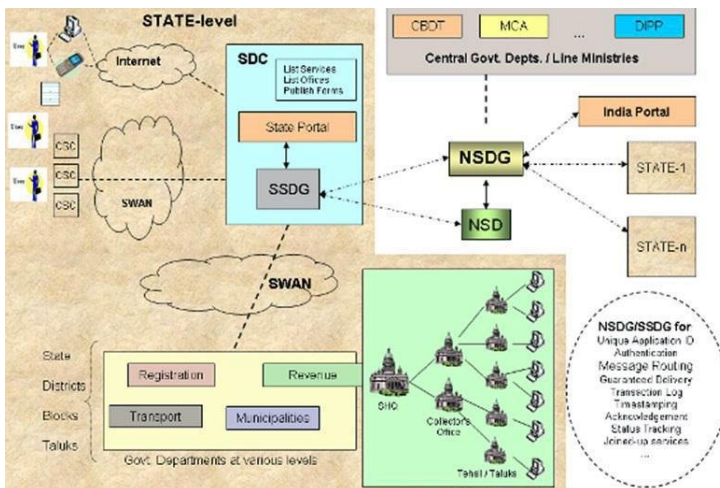
Figure 15: State Services Delivery Gateway

3.3.4 Capacity Building

Capacity Building Scheme aims to develop IT expertise and skills at various levels of Government to achieve the following:-

1. Bringing standardization and consistency across initiatives
2. Change Management and training requirements
3. Government Process Reengineering
4. Optimizing cost and resource utilization
5. Leveraging external resources
6. Implementing best practices followed elsewhere.

As part of the Capacity Building, the following Courses / Training programs are undertaken by TNeGA for the benefit of Government employees:-

1. Basic IT Orientation Training

2. e-District Application Training

3. e-Governance Orientation Training

4. Specialized Training on e-Governance (STeP) Program

5. Soft Skills Training

6. Hardware and Networking Courses

7. Database Management Courses

8. Internet Protocol Version 6 (IPv6) Training

9. Change Management Training

10. Government Process Reengineering Training

11. Project Management Courses

12. Application Software Training

Social Welfare Schemes, Jeevan Praman Training, Refresher Training and Computer Skills Training programmes were conducted between April 2017 and June 2017 during which 16,701 number of persons were trained.

Figure 16: Training programme conducted on Computer Skills to the officials of Tamil Nadu House, New Delhi.

3.3.5 Centre of Excellence (CoE) for Capacity Building

Government of Tamil Nadu has implemented various e-Governance initiatives in the State and is providing services to the citizens through various modes under the e-Governance schemes. As the skill sets in the departments are not adequate to handle the e-Governance projects in the initial stages of Project development and implementation, the

Government needs to build the capacity and skills in ICT for the officials.

The Government of Tamil Nadu announced the establishment of "Centre of Excellence for Capacity Building" in order to manage and implement software development in Government departments and to help the Government employees to develop their e-Governance Skills and to issue certificates.

Centre of Excellence will be a facility for collaboration on innovative research, technology and software solutions, involving a combination of academic, industry and Government participants. The fundamental principles of "Centre of Excellence for Capacity Building" in Government of Tamil Nadu are education, entrepreneurship and innovation.

3.3.6 Tamil Nadu Geographical Information System (TNGIS)

3.3.6 (a) Implementation of Tamil Nadu Geographical Information System

Considering the urgent need to bring about a point of convergence for Geographical Information System users through a focused development environment and to avoid disorientation and wastage of resources, it was felt that a common platform for Tamil Nadu State Spatial Data Infrastructure (TNSSDI) has to be established in the Tamil Nadu Geographical Information System (TNGIS) and a Tamil Nadu Geographical Information System Policy be evolved.

Orders have been issued for this purpose and a sum of Rs.132.80 Lakhs has been sanctioned administratively.

- A Technical Team has been formed with representatives from user Departments.

- Design and Development of Metadata Framework in progress by the Implementing AgencyNational Informatics Centre (NIC)

- A comprehensive design is proposed to take care of the diverse set of spatial data including:

  ✓ Multiple Departments

  ✓ Multiple areas of interest, viz. State, Districts, Taluks, Blocks, Local Bodies, etc.

  ✓ Layers on Multiple Scales (Administrative Boundary in 50k, 10k, 1k, etc.)

  ✓ Multiple roles / users in Multiple Departments / Districts

  ✓ Multiple privileges (Intra / Inter / Public) for various layers.

So far 21 Departments/ Organizations have shared their respective layers.

a. Security auditing for TNGIS URL was done by STQC and report submitted.

b. The 4 Servers are placed at BSNL-DC and GIS application was hosted.

c. The Hon'ble Chief Minister inaugurated the TNGIS URL (www.tngis.tn.gov.in) on 05.08.2016.

d. 233 layers are being hosted in TNGIS URL.

e. 449 user credentials have been issued to officials of Government Agencies.

f. Digitalising of 31 SIPCOT layouts and hosting in TNGIS server.

g. Mapping of Accidents – 108 services – developed online modules – GRID / Cluster / Buffer analysis

h. Plotting of ICDS, e-SevaiCentres and Hostel locations through e-District Managers (eDMs).

i. Hosting of SIDCO, SIPCOT & TIDCO projects in National Centre for Geo-informatics website.

j. Completed base layers such as District and Panchayat level village maps and hosted in TNGIS URL.

k. Out of 17,652 revenue villages, 16,721 revenue village maps have been integrated.

l. Mapping of Hindu Religious and Charitable Endowments (HR&CE) lands was done for Tiruneermalai and Vadapalani Temples.

m. Mapping of Stadiums of Youth Welfare and Sports Development Department.

3.3.6 (b) Creation of Standardised Digital Address Number (SDAN)

This task of Creation of Standardised Digital Address Number (SDAN) has been taken up in accordance with the announcement made by the Hon'ble Minister for Information

Technology in the Assembly. The project aims to generate alpha-numeric codes for the entire State of Tamil Nadu to identify the location of properties, wherein there is no requirement for street name or address. It is proposed to complete the assignment within the current year.

3.3.7 State Resident Data Hub (SRDH)

State Resident Data Hub (SRDH) is a unified Database of all residents of the State. This repository will be accessed by and be available to all departments which deliver services to citizens. It will help the Government in better targeting, effective service delivery, greater accountability and more efficient monitoring of schemes. The revised estimated cost for this project is Rs.31.72 Crore.

The SRDH aims to enable the State to:

- Manage complete State Level Resident Data in a digitized, centralized and secured manner;

- Utilise AADHAAR number to uniquely identify the beneficiaries of different schemes implemented by Government;

- Integrate AADHAAR enabled National Population Register (NPR) data with Departmental utility Databases on a real time basis;

- Incorporate AADHAAR authentication into various applications.

A Consulting Agency is in place to support the project implementation and the System Integrator has been identified who will implement and support the project. Through them, a software has been developed for the

project. Data from various Government departments have been received, which are being de-duplicated and standardized.

Figure 17: Inauguration of State Resident Data Hub (SRDH) and Tamil Nadu Geographical Information System (TNGIS)

3.3.8 Aadhaar Permanent Enrolment Centers (PECs)

Till 30.09.2016, the Aadhaar enrolment was being carried out by the Registrar General of India (RGI) together with the National Population Register (NPR) enrolment process through Bharat Electronics Ltd. (BEL) and their Enrolment Agencies.

In pursuance to the announcement of the then Hon'ble Chief Minister of Tamil Nadu on

23.09.2016, Aadhaar Permanent Enrolment Centres have been setup throughout the State for Aadhaar Enrolment. Director of e−Governance (DeG)/TNeGA has been made Registrar under UIDAI to operate the Permanent Enrolment Centers across the State. TACTV and ELCOT are designated as Enrolment Agencies.

As of now, TACTV is operating the PECs in all Taluk Offices, Head Quarters and Zonal Offices of Corporation of Chennai and ELCOT in the Collectorates, Municipalities, Corporation Head Offices (other than Chennai). Public can update any change in the demographic data in the PEC itself.

With respect to enrolment of 0-5 years population, TNeGA has empanelled 3 Agencies through open tender. Similarly for enrollment of school children in the age group of 5-18 years, 1 enrolment agency has been selected through

tender and the enrolment is in progress. So far, 27,17,551 children have been enrolled.

3.3.9 e-Office

To create a paperless office, "e-office Application" was implemented in TNeGA during the year 2015-2016. The Information Technology Department has been continuously using the application from April 2016 and plans to introduce the same in other departments in the year 2017-2018. The e-Office system, when used continuously, will increase the efficiency of office work.

3.3.10 Facilitation for Mission Mode Departments

Many Government Departments have been implementing e-Governance projects for the past few years. For delivering of services to the citizens, the Government of Tamil Nadu has prioritized the services of 14 Mission Mode Departments which includes:

1. Finance Department

2. Commercial Taxes Department

3. Agriculture Department

4. Social Welfare and Nutritious Meal Department

5. Health and Family Welfare Department

6. Rural Development and Panchayat Raj Department

7. Revenue and Disaster Management Department

8. Home Department

9. Municipal Administration and Water Supply Department

10. Co-operation, Food & Consumer Protection Department

11. School Education Department

12. Registration Department

13. Transport Department

14. Industries Department

The Information Technology Department is facilitating the work of these Departments through common IT infrastructure including

Tamil Nadu State Data Centre (TNSDC), Tamil Nadu State Wide Area Network (TNSWAN) and Arasu e-Sevai Centres for enabling electronic delivery of services. ELCOT and TNeGA are involved in providing technical guidance and project implementation support for the Mission Mode Departments.

3.3.11 IT Security Auditing

In order to protect the Government websites and IT applications from defacement and hacking, IT Security Auditing of websites and IT applications are being conducted in a phased manner, for which an amount of Rs.1,76,41,000/- have been sanctioned. ELCOT has empanelled Security Audit Agencies and departmental web applications are being audited by them.

Stage	No. of Organizations	Audit Completed	Audit in progress
1	79	69	10
2	37	6	31

Considering the urgent requirements for IT Security Audit, TNeGA has also empanelled IT Security Audit Organizations approved by CERT-IN.

3.3.12 Online Demonstrative Services Directory

Government of Tamil Nadu announced that an "Online Demonstrative Services Directory" will be created and made available to the public which will contain the name of the e-Services, Website address, Links to the Services and a demonstrative user guide. The software has been developed, User Acceptance Test (UAT) and Security Audit have been completed and has been deployed in the Cloud environment at ELCOT Data Centre.

3.3.13 Scheme Monitoring Application Software

In order to measure the effectiveness of the schemes and to improve the delivery of the benefits to the public, a "Scheme Monitoring Application Software" has been created. This tool will enable the Departments to review and monitor the progress of the schemes on a near real-time basis and helps in decision-making. The software has been developed, UAT & Security Auditing have been completed and it has been deployed in the Cloud environment at ELCOT Data Centre.

3.3.14 e-Learning content for Government Employees

In order to improve employees ICT skills and to expedite e-Governance implementations in the State, an online training software has been developed to implement e-learning solution. The software has been developed,

tested and deployed in the Cloud environment at ELCOT Data Centre.

3.3.15 e-Governance Initiative Fund

To deliver various services of Government Departments through e-Governance, 14 Departments have been selected as Mission Mode Departments (MMDs) and these departments are being computerized. In order to support the non-Mission Mode Departments which intend to deliver integrated services through e-Governance, an e-Governance Initiative Fund has been created for encouraging their e-Governance initiatives. A sum of Rs.10 Crore has been sanctioned for this purpose. Common software that will be of use for all Departments like e-Office, Digital Archives etc. are being developed using these funds.

3.3.16 SMS based Service Tracking Facility

SMS based tracking system is a two way communication facility to the citizens for

providing information and to get information from the citizens. The applicant receives the SMS on submitting the application at e-Sevai Centres and after a few days, the status of the application (whether approved / rejected / returned) is also informed to the applicant through SMS. TNeGA has also introduced a short code -155250 facility on 17.03.2017. By using short code, customer can know the current status of the application immediately. 2,00,083 people have been benefitted through use of short code service ason 19.6.2017.

3.3.17 e-Governance Standards Manual

Tamil Nadu e-Governance Agency is preparing e-Governance Standards Manual in consonance with the National Level standards with the co-ordination of National Informatics Centre (NIC), Tamil Virtual Academy (TVA), Electronics Corporation of Tamil Nadu (ELCOT), Centre for Development of Advanced Computing (C-DAC) and Standardisation, Testing and

Quality Certification (STQC). The Standard Manual would be made available shortly.

3.3.18 e-Taal

e-Taal is a web portal for dissemination of e-Transaction statistics of Central and State level Projects including Mission Mode Projects. It receives transaction statistics from web based applications periodically on near real time basis. Based on the statistics, the States / Projects are ranked on National Basis. During the current year (2017), the State is second at the all India level with more than 14 crore transactions.

3.3.19 e-Sign facility

e-Sign facilitates digitally signing a document by an Aadhaar holder using an online service. Since, the digital signature of the signer is linked with Aadhaar Number, the authentication of signer can be verified using Aadhaar e-KYC Service. Action is being taken to implement e-Sign in all electronic transactions.

3.3.20 Ullangaiyil Sandridhazh (உள்ளங்கையில் சான்றிதழ்) Scheme

Nowadays, mobile phone has become indispensable. The services provided by TNeGA are delivered to the citizens through convenient and easily accessible delivery channels / web enabled media ensuring efficiency, transparency and reliability at affordable cost. The status of the applications submitted by the citizens are delivered via SMS.

In order to ensure that the certificates issued under e-District Programme reach the doorsteps of citizen, "Tiny URL" has been developed with the help of M/s. C-DAC. Once the Certificate is approved, a Tiny Url will be sent to the registered mobile number of the citizen. With the help of smart phones and internet connectivity, the certificate can be downloaded by the citizens from their home. This scheme was inaugurated by Hon'ble Chief Minister on 23.05.2017.

3.3.21 Tamil Nadu Information Technology (Electronic Service Delivery) Rules, 2016

Tamil Nadu Government has taken several initiatives to improve the delivery of public services and simplify the process of accessing them. More than 165 services of various Government Departments are now being accessed through online in e-Sevai Centres span across the length and breadth of the State. Further, 300 additional services of various Government departments are to be provided online through e-Sevai Centres.

In order to create a digital service delivery infrastructure in the State for the e-enablement of citizen centric services by Government Departments and to prescribe the manner and format in which such electronic records shall be filed, created or issued, rules have been framed under Sections 6 and 6A of the Information Technology Act, 2000 (Central Act 21 of 2000)

termed as Tamil Nadu Information Technology (Electronic Service Delivery) Rules, 2016. These rules have been issued vide G.O.(Ms.) No.13, Information Technology (e.Gov.I) Department, dated 02.12.2016 and notified through Tamil Nadu Government Gazette.

Tamil Nadu Information Technology (Electronic Service Delivery) Rules, 2016 stipulates the manner in which administration of e-service delivery has to be effected through Authorised Service Providers and Authorized Agents. Based on these rules, the Government has notified the Director of e-Governance as the Director of Electronic Service Delivery.

Under these rules, every Competent Authority who is a Head of Department has to notify within a period of one hundred and eighty days from the coming into force of these rules, to make available the public services of the department which can be delivered through electronic mode and the date by which each

such service shall be made available through electronic mode, the manner of delivery of such services and their service levels. Also, all public services of each Government Department / Agency or body shall be delivered in electronic mode within 5 years from the date of coming into force of these Rules.

Rule 18 (2) of these rules mandates that the prescribed security procedures, as defined in the Information Technology Act, 2000 shall be followed by the Head of the Department and the Government Authorities, Statutory Authorities and Competent Authorities, in respect of the electronic data, information, applications, repository of digitally signed electronic records and Information Technology assets under their respective control.

Based on these Rules, most of the Government Departments and Heads of Departments / Corporations / Boards / Agencies under their control have identified and notified

their public services to be delivered through electronic mode.

3.4 Financial Status

For development of e-Governance applications and driving e-Governance activities in the State, Tamil Nadu e-Governance Agency (TNeGA) has been formed. It is supported by State Government by means of release of grants for its administrative expenses. Projects like e-District, Capacity Building, SSDG, SRDH etc., are implemented in the State utilising the grants released from the State and Centre. The funds are received in a phased manner after completion of milestones as per Master Service Agreement (MSA).

Projects like Cloud Based Asset Management, SMS Based Service Tracking, Tamil Nadu Geographical Information System, Centre of Excellence, IT Security Audit are fully funded by State Government.

From the year 2015-2016 onwards, TNeGA is receiving Revenue share from the e-Sevai (CSC) operations in the State. From December 2016, the share amount is being received through the e-Wallet facility in e-Sevai Portal.

Year	Percentage of revenue shares	Receipt
2015-2016	2%	3.04 Cr
2016-2017	20%	10.49 Cr

The above revenue share would be utilized for the creation of infrastructure, administrative expenses, conducting awareness campaign / Training workshop, etc.

CHAPTER - IV

TAMIL NADU ARASU CABLE TV CORPORATION LTD (TACTV)

4.1 Introduction

"Arasu Cable TV Corporation Limited" was incorporated on 4.10.2007. The objective is to provide high quality cable TV signals to the public at an affordable cost. Digital Head Ends were commissioned at 4 places viz., Thanjavur, Tirunelveli, Coimbatore and Vellore.However, due to various reasons thereafter the Corporation became defunct.

The Hon'ble Chief Minister of Tamil Nadu, after assuming office in May 2011, revived and revamped the Corporation by giving financial assistance of Rs.3 Crore on loan basis and renamed it as 'Tamil Nadu Arasu Cable TV Corporation Ltd' (TACTV).

The Hon'ble Chief Minister of Tamil Nadu made an announcement on the floor of the Assembly on 30.8.2011, that Tamil Nadu Arasu Cable TV Corporation Limited would provide quality services at an affordable cost with Rs.70/- being the monthly subscription payable by the subscribers to the Cable TV operators of which Rs.20/- would be paid to Tamil Nadu Arasu Cable TV Corporation by the Cable TV Operators. Accordingly, the Tamil Nadu Arasu Cable TV Corporation is providing 90-100 channels with quality and clarity at an affordable cost of Rs.70/.

The Cable TV services all over Tamil Nadu (except Chennai) were inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 02.09.2011.

4.2 Vision

Tamil Nadu Arasu Cable TV Corporation Limited was revived and revamped with a vision

to provide quality service to the public at an affordable cost.

4.3 Background and Growth

A few Multi System Operators (MSOs) were dominating the cable TV Industry and the Local Cable TV Operators as well as the public were forced to pay exorbitant amount as subscription fees. The public were paying Rs.150 to Rs.250 to MSOs to avail the Cable TV services.

At present, TACTV is transmitting 90-100 Channels, at an affordable cost of Rs.70/- per month. The response from the Local Cable TV Operators and the public is overwhelming and more and more Cable TV Operators and the general public have started to come into the fold of TACTV. This is evident from the fact that the subscriber base of TACTV which was 4.94 lakh on 2.9.2011 has risen to 70.52 lakh connected

through 26,376 Local Cable TV Operators as on 1.5.2017.

4.4 Infrastructure

Tamil Nadu Arasu Cable TV Corporation has established additional infrastructure by utilizing the Head Ends of willing erstwhile private Multi System Operators (MSOs) in 27 Districts on lease, apart from revamping its existing Digital Head Ends in four Districts and commissioning of the Digital Head End in Chennai. TACTV also took on lease 50 sub-control rooms from private cable TV operators and through 82 head ends and 26,376 cable TV operators provide cable TV signals to 70.52 lakh subscribers.

4.5 Organization Structure

TACTV is headed by a Chairman and a Managing Director. There are 2 General Managers in the cadre of District Revenue

Officers and 1 General Manager in the cadre of Joint Director, One Company Secretary, 2 Managers in the cadre of Deputy Collectors, 2 Block Development Officers with 114 supporting staff to manage the entire operations in the State. Each District has a Tahsildar as Deputy Manager who is supported by 1 Assistant Manager, 1 Technical Assistant and 3 Assistant Technicians. The Technical Wing is functioning with two Chief Technical Officers, one Telecom Consultant, One Deputy Manager, 6 Technical Assistants and 10 Assistant Technicians. The Financial wing is headed by a Financial Advisor and Chief Accounts Officer supported by One Accounts Officer, One Assistant Accounts Officer and 5 Accountants.

4.6 Inauguration of Cable TV Services in Chennai

The Hon'ble Chief Minister of Tamil Nadu inaugurated the Cable TV Services of TACTV in Chennai Metro on 20.10.2012. TACTV is now

providing Analog and Digital signals to the Local Cable TV Operators in Chennai Metro Area.

4.7 Digitalization

The Government of India, Ministry of Information & Broadcasting in the Ref.No.9/32/2007-BP&L dated 2.4.2008 issued Multi System Operator (MSO) License to the Tamil Nadu Arasu Cable TV Corporation in the Conditional Access System (CAS) areas of Chennai Metro. As per the Cable TV Network Amendment Act, 2011, the entire Cable TV Services in the Country areto be digitalized within a time frame i.e., by 31.12.2016. In the first phase, four Metros including Chennai were to be digitalized on or before 31.10.2012.

TACTV applied for MSO License for the DAS notified areas of Chennai Metro on 5.7.2012 and on 23.11.2012 for the Rest of Tamil Nadu (RoTN) both of which were pending with the

Ministry of Information & Broadcasting (MIB), Government of India.

Due to the State Government's continuous efforts, the Ministry of Information & Broad casting (MIB), Government of India have issued the Digital Addressable System (DAS) License to Tamil Nadu Arasu Cable TV Corporation on 17.4.2017. This is first such instance in India in which a State Government has been issued with DAS Licence.

4.8 Steps taken by TACTV for Digitalization

(a) Procurement of Set Top Box, Conditional Access System (CAS) and Subscriber Management System (SMS)

1. A Global Tender was floated on 6.5.2017 through which 60 Lakh Standard Definition Set Top Boxes, 10 Lakh High Definition Set Top Boxes, CAS, SMS, Triple Play Set Top Boxes and Data Over Cable Service Interface Specification (DOCSIS) will be procured.

Tenders have been received from various companies and are being scrutinized. Set Top Boxes will be procured and delivered at the earliest.

2. Government have issued Orders in G.O. (Ms.) No.7, Information Technology (Admin.2) Department dated 30.5.2017 according Administrative Sanction for the project proposal of Digitalization of TACTV Corporation.

(b) Steps taken to distribute the Digital Cable TV Signals throughout Tamil Nadu.

1. TACTV has issued the Letter of Acceptance (LoA) to M/s. RailTel Corporation of India Ltd and M/s. BSNL for taking on lease of their Bandwidth for taking the signal across the State.

2. Action is being taken for upgradation of the existing Chennai Digital Head End from MPEG2 to MPEG4 standards.

3. The Local Cable TV Operators registered with TACTV have registered online the number of Set Top Boxes required by them for the Subscribers.

4.9   e-Sevai Centres of Tamil Nadu Arasu Cable TV Corporation Ltd.

As per the announcement made by the Hon'ble Minister for Information Technology on the floor of the Assembly on 4.8.2014, Tamil Nadu Arasu Cable TV Corporation has established 487 Arasu e-Sevai centres in all the Taluks of Tamil Nadu and in Chennai Corporation Area. TACTV also took over the e-Sevai centres of ELCOT and presently has 654e-Sevai centres in Secretariat, Headquarters of Greater Chennai Corporation, all District Collectors' Offices, Taluk Offices, Corporation Offices, Municipality Offices,

Zonal Offices and Division Offices across the State.

The Arasu e-Sevai Centres are equipped with state of the art facilities with high speed broadband internet connectivity and offer a host of services like Certificates of Revenue Department and applications for Social Welfare Department Schemes, Utility Bills payment facility, Online booking for Text Books of the Tamil Nadu Text Book Corporation, application for TNPSC exams, Printing of Electoral Photo Identification Cards (EPICs), Plastic Aadhaar Card services, Smart Ration Cards etc. Within a short span of 29 months from inception, about 1.10 Crore persons have benefitted from the services offered by the e-Sevai Centres of Tamil Nadu Arasu Cable TV Corporation.

4.10 Permanent Enrolment Centres

TACTV has also started Aadhaar Enrolment services from 1.10.2016, through its 303

Permanent Enrolment Centres for Aadhaar (PEC) set up in all the Taluks and Chennai Corporation Area. One mobile unit for enrolling elders, physically challenged personnel and sick people is also in operation in Chennai. Through these PECs, TACTV has provided Aadhaar Enrolment services to 16 lakh persons till date. People can also update the demographic details like address, mobile number etc., in their Aadhaar data in these Permanent Enrolment Centres.

4.11 High Speed Broadband Internet Services

The Hon'ble Chief Minister on 14.9.2015 announced in the Assembly under Rule 110 that a Special Purpose Vehicle viz. Tamil Nadu FibreNet Corporation will be formed for implementing the BharatNet Scheme in Tamil Nadu and TACTV using its Internet Service Provider (ISP) license will provide Internet service to village panchayats to be linked under BharatNet scheme and Internet protocol

Television (IPTV) will also be provided along with high speed broadband and other internet services. A Government order has been issued for the formation of Tamil Nadu FiberNet Corporation on 1.2.2016 and a share capital of Rs.50 lakh has been sanctioned.

A Memorandum of Understanding (MoU) between the Government of India, Government of Tamil Nadu and Bharat Broadband Network Limited (BBNL) for implementing the BharatNet Scheme in Tamil Nadu was exchanged in the presence of Hon'ble Chief Minister on 25.4.2017.

Tamil Nadu Arasu Cable TV Corporation Limited selected M/s. Vodafone for providing internet services through open tender process. The "Internet to every household" scheme was inaugurated by Hon'ble Chief Minister on 1.3.2016 to 1100 subscribers in District Headquarters using the Vodafone's leased line.

Now the Subscriber base has increased to 2,577 households.

In order to expand the Internet services and to maximize the subscribers, TACTV had floated the Expression of Interest (EoI) inviting applications from interested persons to become business partners of TACTV in providing Internet services to the public on revenue sharing basis and about 392 applications were received. Orders have been issued to 170 eligible applicants for starting the Internet service in their allotted areas and around 24,750 households are expected to be provided with the Internet service through them.

With regard to Internet Protocol Television (IPTV) the Government have issued orders in G.O. (Ms.) No.2, Information Technology (Admn.II) Department dated 25.1.2016 for the roll out of IPTV services. A Detailed Project Report (DPR) is under preparation.

4.12 Free Public WiFi and Internet to Schools

Hon'ble Chief Minister announced on 23.9.2016 that, "AMMA Wi-Fi Zones" will be commissioned in 50 places and also free Internet facility will be provided in 50 Government Schools with a budgetary support of Rs.10 Crore for the capital expenditure and a recurring expenditure of Rs.1.5 Crore.

Tamil Nadu Arasu Cable TV Corporation has proposed to set up 5 Wi-Fi zones in Chennai at an estimated cost of Rs.1.26 Crore in the first Phase on trial basis and 45 Wi-Fi zones in rest of Tamil Nadu at an estimated cost of Rs.7.30 Crore.

Broadband Internet Service will be provided in 50 schools in the Educationally Backward Blocks at an expenditure of Rs.86.50 lakh in the first phase. Later, 316 schools in Educationally Backward Blocks will be provided

Broadband Internet Service at a capital expenditure of Rs.5.47 Crore and an operational and maintenance expenditure of Rs.2.36 Crore.

4.13 Financial performance of TACTV

TACTV was started with Tamil Nadu Government's share capital of Rs 25 Crore. It also received Rs.33 Crore from Government as term loan. TACTV's revenue has increased from Rs 2.44 Crore in the year 2008-09 to Rs.163.92 Crore in 2013-14, Rs.181.91 Crore in 2014-15, Rs.223.53 Crore in 2015-16 and Rs.233.67 Crore (unaudited) in 2016-17.

Figure 18

110
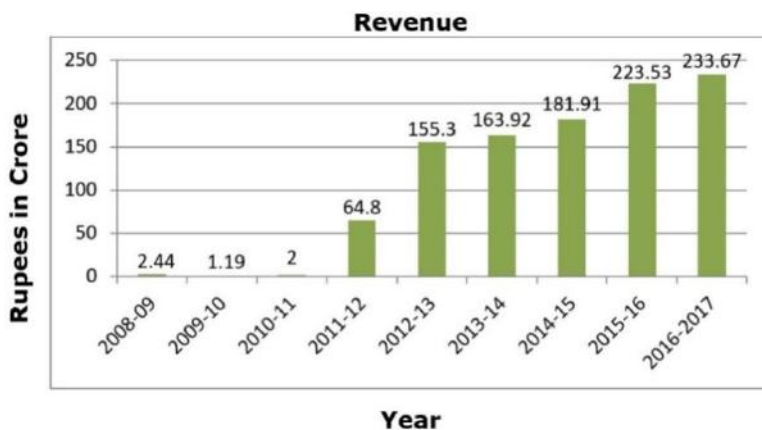
TACTV was incurring loss to the tune of Rs.15.03 Crore till 2011-12. After revamping and reviving of TACTV by the Hon'ble Chief Minister in 2011, TACTV increased its subscriber base and tapped revenues from Private Local Channels resulting in profit for the year 2012-13, 2013-14, 2014-15, 2015-16 and 2016-17.
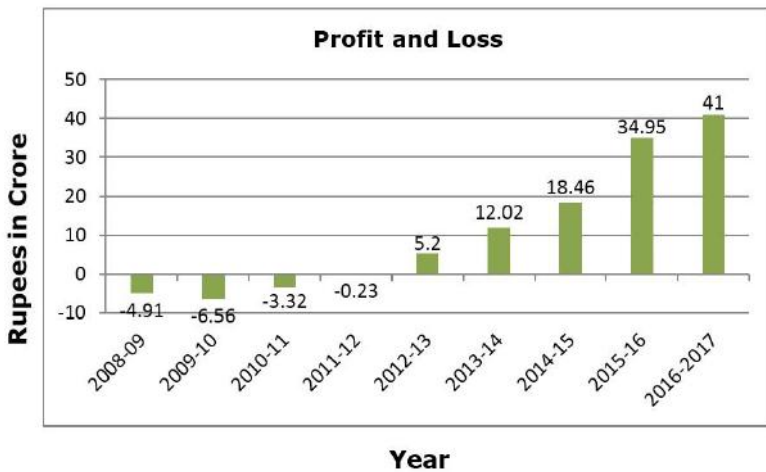
Figure 19

4.14 Financial Performance for the year 2013-14

TACTV has achieved a net profit for the first time after its inception during the financial year 2013-14 after wiping out the accumulated losses of previous years. Several steps were taken to increase the revenue from all the sources, the most important of which was increasing the subscriber base which was 62.31 Lakh (as on 1.4.2013) to 65.93 Lakh as on 31.3.2014. Further, revenue was also generated by giving allotment orders to more Private Local Channels selected through Tender cum Auction process and also through inviting Expression of Interest.

Further, TACTV was paying Rs 15.78 Crore per month towards pay channel broadcaster's subscription fee amounting to Rs 189.36 Crore per annum, during the year 2013-14. Hence, TACTV took expenditure control and revenue

augmentation measures including securing discounts to the tune of Rs 38.40 Crore from the Pay Channel Broadcasters for the year 2013-14. All the above said measures have made TACTV attain a net profit of Rs.12.02 Crore for the year 2013-14. After wiping out the accumulated loss of Rs.9.83 Crore, TACTV had a surplus fund of Rs.2.18 Crore during 2013-14 and out of this, an amount of Rs.1.50 Crore was paid as dividend to the Government.

4.15 Financial Performance for the year 2014-15

During 2014-15, the subscription rates of various Pay Channel broadcasters were further reduced through negotiations thereby resulting in a saving of Rs.8.59 Crore per year. The revenue of the Corporation during 2014-15 was Rs.181.91 Crore as against Rs.163.92 Crore which was achieved during 2013-14.During the

financial year 2014-15, TACTV madea Net Profit of Rs.18.46 Crore. Tamil Nadu Arasu Cable TV Corporation also paid a dividend of Rs.5.50 Crore to the Government for the year 2014-15.

4.16 Financial Performance for the year 2015-16

During 2015-16, the subscription rates of various Pay Channel broadcasters were further reduced through negotiations thereby resulting in saving of Rs.11.50 Crore per year. The revenue of the TACTV during 2015-16 was Rs.223.53 Crore as against Rs.181.91 Crore achieved during 2014-15. During the financial year 2015-16, the Corporation made a Net Profit of Rs.34.95 crore (after taxes).

Tamil Nadu Arasu Cable TV Corporation has also paid a dividend of Rs.10.49 Crore to the Government for the year 2015-16. TACTV has

also contributed Rs.5 Crore to the Chief Minister's Relief Fund in 2016.

4.17 Financial Performance for the year 2016-17

During 2016-17, the Corporation has attained revenue of Rs.233.67 Crore (unaudited) and the Corporation is expected to achieve a profit of Rs.41 Crore (unaudited) after taxes.

CHAPTER - V

TAMIL VIRTUAL ACADEMY

5.1 Introduction

The Tamil Virtual University (TVU) was established as a Society by the Government of Tamil Nadu on 18th May 2000 to provide Internet based resources and opportunities to the Tamil Communities living in different parts of the globe, as well as others interested in learning Tamil and acquiring knowledge of the History, Art, Literature and Culture of the Tamils. Later, Tamil Virtual University has been renamed as 'Tamil Virtual Academy'. The TVA's website was launched on 17th February 2001 and is functioning continuously.

5.2 Vision

Following are the aims of Tamil Virtual Academy:-

❖ To develop solutions for Tamil Computing.

- ❖ To develop and deliver Internet based learning materials for Tamil language, literature and culture to the global Tamil Communities and others interested in Tamil.

- ❖ To develop and deliver customized programmes to meet the cultural needs of the Tamil Communities in different parts of the world and help them to retain heritage.

- ❖ Compile the knowledge resources developed by the Tamils who are living around the world, and to propagate the same.

- ❖ To provide lessons on Tamil language, literature and culture.

- ❖ To provide the opportunities to acquire knowledge or learn or get Certificates / Diplomas / Degrees through Tamil University, Thanjavur.

5.3 Activities

5.3.1 Academic Programmes

To organise and provide academic programmes from basic levels to research programme.

5.3.2 Tamil Computing

To carryout fundamental research and develop a database required for Tamil Software development.

5.3.3 Digital Library

To develop Digital Library for the use of students and others.

5.3.4 Tamil Software Development

To develop Tamil software through Tamil Software Development Fund provided by the Government of Tamil Nadu and to test and certify the software developed by others.

5.3.5 Documentation and Archiving of Tamil Art & Cultural activities

Cultural activities of Tamils are documented and uploaded in the website for dissemination andknowledge sharing.

5.4 Academic Programmes

At present, Tamil Virtual Academy is offering Academic Programmes like Primary Education, Certificate Course, Diploma, Higher Diploma and Degree (B.A. Tamilology). The details are as given below:-

Primary Course	Certificate Course	Higher Certificate	Degree
Introducing Alphabetsand Rhymes for Beginners	Basic level (1-2 Std. equivalent)	Grade-1 (7-8 Std. equivalent)	Diploma
	Intermediate level (3-4 Std. equivalent)	Grade -2 (9-10 Std. equivalent)	Higher Diploma
	Advanced level (5-6 Std. equivalent)	Grade -3 (11-12 Std. equivalent)	Degree (B.A. Tamilology)

No age limit is prescribed to join the above courses.

16,923 candidates from 74 Countries have registered for different courses and 5,880 students for Certificate course, 275 students for Higher certificate course, 630 students for Diploma course, 321 students for Higher Diploma course and 232 students for Degree course were awarded so far. Academic programmes are provided through 86 Contact Centres from 19 Countries.

Figure 20: Sohar Tamil Mandram, Sohar, Oman

For the benefit of students and others, Tamil Virtual Academy has developed and released CDs for Primary, Basic, Intermediate and Advanced level students under the captions, Learn Tamil, *Tamil Karpom, Thirukkural* and Technical Glossary

5.5 Thagavalattruppadai

Orders have been issued in G.O. (Ms) No.4, Information Technology Department, dated 20.02.2015 for creation of a comprehensive and collaborative Repository of Tamil Language, Literature, Art, etc., and Rs. 20 lakh was sanctioned for the same. The action taken in this regard are as follows:-

- ❖ 1457 images of Museum objects and sculptures have been taken and basic description prepared for them.

- ❖ Around 44,525 images of temple art, inscription, paintings, sculptures and

archaeological remains of Tamil Nadu collected from various sources have been photographed.

❖ Basic description and images of 120 ancient temples in Tamil Nadu have been uploaded in Digital Library Portal.

❖ 500 rare and ancient Tamil coins images have been collected and basic descriptions have been prepared.

❖ 5000 images with descriptions related to Tamil culture are ready to be uploaded in the website.

❖ 426 images of inscriptions from 32 locations have been compiled with explanation.

❖ 572 images of paintings from 7 locations have been compiled with explanation.

❖ 1230 images of sculptures from ancient temples and museum have been prepared

with texts have been compiled with explanation

❖ 882 pages related to inscriptions have been converted by Optical Character Recognition (OCR)

❖ As a part of Cultural Atlas project, the 1st phase has started from Madurai to document archaeological remains and temples. So far 2300 images have been taken from temples and archaeological sites in this region and also 2330 images are collected from State Archaeology Department and temple authorities.

5.6 Visual Thesaurus, e-Learning Portal, Digitization

This Government has ordered that Visual Thesaurus for Tamil, e-Learning Portal and Digitization projects shall be taken up by Tamil Virtual Academy. The details are as follows:-

5.6.1 Visual Thesaurus for Tamil

For development of Visual Thesaurus for Tamil in which the words with same meaning are grouped and their pronunciation and description will be also available, a sum of Rs.27.42 lakh has been sanctioned in G.O.(2D) No.16, Information Technology Department, dated 03.09.2014. The database has been developed for the purpose of machine translation. This Visual Thesaurus is different from dictionary. Till date, 70,000 meanings have been identified for 13,000 head words. Further, the citations from the literatures are also provided.
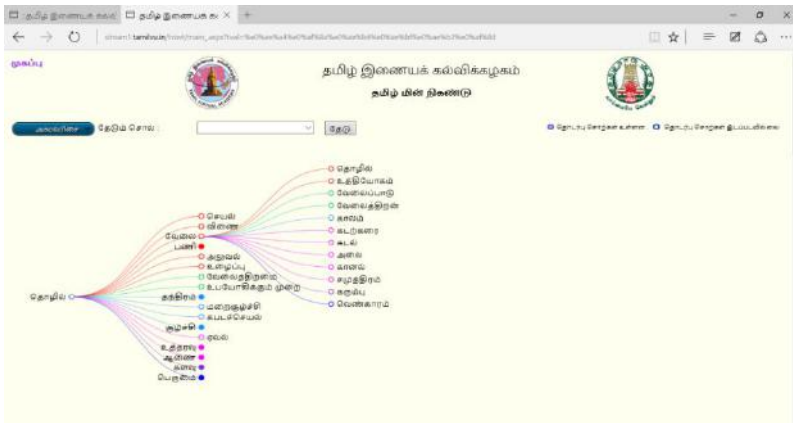
Figure 21

5.6.2 e-Learning Web Portal

To develop an e-learning web portal to help the students to learn Tamil language easily, Rs.12.26 lakh has been sanctioned in G.O.(2D) No.15, Information Technology Department, dated 03.09.2014. The website of Tamil Virtual Academy will soon be re-launched with rich content of rare Tamil books and much more useful information meant for Tamil diaspora.

5.6.3 Digitization of Nationalized books

In G.O. (Ms) No. 5, Information Technology Department, dated 20.02.2015 a sum of Rs. 10 lakh was sanctioned for Digitization of Nationalized books. The following action have been taken:-

❖ To convert the scanned document into searchable text by Google Optical Character Recognition (Google OCR) as in

house project at Tamil Virtual Academy using Google OCR.

❖ 178 nationalized books are converted into text format in the first phase. The editing and quality checking are under progress.

5.7 Documentation and Archiving of Tamil Art & Culture and monthly lectures on Thagavalattruppadai

A monthly lecture series on Tamil Heritage, Art & Culture are being organised by Tamil Virtual Academy involving the Scholars and Experts and the same is being recorded and webcast on Tamil Virtual Academy website. Further, every month, a renowned scholar deliver a special lecture on Sculptures, Language and Ancient Culture of Tamils and the same have been webcast on Tamil Virtual Academy website. So far, 25 monthly lectures have been conducted.

5.8 Outreach initiatives of Tamil Virtual Academy

The Tamil Virtual Academy is following an integrated outreach approach to strengthen and enrich the Tamil Computing initiatives in Tamil Nadu. For this outreach initiative, TVA is implementing 1. Kani Tamil Peravai in higher educational institutions, 2. Tamil Mega Encyclopedia Project to enrich the Tamil content in the virtual domain, 3. Localization of Khan Academy videos in Tamil and 4. Open Source and Creative Common Initiatives.

5.8.1 Kani Tamil Peravai

Kani Tamil Peravai has been initiated in the higher educational institutions of Tamil Nadu to develop Tamil Computing and ensure that next generation realize its significance. The Tamil Virtual Academy has established 100 units of "*Kani Tamil Peravai*" in the State. So far, 10,000 students who have been enrolled as Members are doing their Tamil Computing

projects. In G.O. (Ms.) No.6, Information Technology Department, dated 29.02.2016, the Government have sanctioned a sum of Rs.25 Lakh to develop these forums.

5.8.2 Tamil Mega Encyclopedia Project

Under the Tamil Mega Encyclopedia Project, TVA has developed about 67,500 encyclopedic articles in Agriculture and Fisheries in collaboration with Tamil Nadu Agricultural University, Tamil Nadu Fisheries University and Movement for Agro Tamil Science. It is proposed to develop Multimedia Encyclopedias in more than 210 fields in Tamil under this project. Encyclopedia on Art available in Tamil Nadu Government and aided Institutions are being compiled and documented under this project.

5.8.3 Localization of Educational Videos in Tamil

Khan Academy has published about 8300 videos in English. TVA has started an initiative to

localize those videos in Tamil. To enrich the Tamil educational content, Tamil Virtual Academy has localized above 1265 videos in Tamil and uploaded in Tamil Virtual Academy portal.

5.8.4 Open Source and Creative Common Initiatives

To promote usage of Tamil Language in Internet, Tamil Virtual Academy will collaborate with non-profitable organizations such as Wikipedia to undertake various campaigns to reach out to school and college students in the State and conduct various contests to enhance the Tamil Computing skills of the younger generation.

5.9 New Plan of Action

To promote the development of Tamil Computing across the world as well as to create a conducive environment and a vibrant eco system to benefit Tamil scholars, public

servants, students and general public, new Tamil Computing projects have been identified. A High Level Committee consisting of renowned Tamil scholars, experts fromlinguistics & Tamil computing fields and representatives from software industry has been constituted to formulate those projects and also a number of meetings have been conducted.

5.9.1 Creation of Tamil Corpus Bank

Corpus extraction is done for Sangam, Medieval and Modern Tamil with a corpus size of 150 million words by the Tamil Virtual Academy in Tamil Corpus Bank. So far, 150 Million words have been collected. The extracted corpus is Meta-tagged according to the Text Encoding Initiative (TEI) standard.

5.9.2 Development of Tamil Corpus Analysis Tools

The following corpus analysis tools are being developed by TVA:

(a) Word Count

This tool counts the number of words in a file.Options have been given for Tamil sorting and deleting the duplicate words.

(b) Word Analyzer

This word Analyzer tool will extract single letter words, two-letter words andthree-letter words. An option also has been provided for Tamil sorting and removing the duplicate words.

(c) Character Identifier

This character identifier will identify and provide the words list within the prescribed delimiter option, whether they start with Tamil letter (Script) / English (roman) / Arabic (numeral).

(d) Word Concordance

This tool will identify, what are the words occurring before and after a particular key-word in a given sentence, and save them in a

separate text file. An option also has been provided for Tamil sorting and removing the duplicate words.

(e) Renaming the files

This windows application will rename all the downloaded files accordingto the format needed by the user.

(f) Domain Identifier

This tool will identify the domain of each word and put them in a separate file. An option is also given for merging the files into one file.

5.9.3 Digital Library

For creation of digital library in Tamil Virtual Academy, a sum of Rs. 1 crore was sanctioned in G.O.(2D) No.2, Information Technology Department, dated 25.02.2016. Scanning the rare printed Tamil books, periodicals, documents and scanning the palm-leaf manuscripts, paper manuscripts, copper

plates, palm-leaf paintings are under progress. So far, 48,01,938 pages have been scanned.

Already digitized book, palm-leaf manuscripts, rare paper manuscripts that are kept in various institutions are being collected. So far, 8.12 TB files have been collected from more than 30 institutions.

In metadata preparation work, all the documents have been categorized in MARC 21 method. So far, 3,892 documents have been meta-tagged. In addition, Summary and Indexing have been completed for 3,559 books by experts in the respective fields.

To publish all the digitized content in online, an Integrated Archive Management System has been developed. All the Meta data have been uploaded in the database.

5.9.4 Unicode format

Necessary steps have been taken to ensure wider acceptance and usage of Tamil 99 key board, Unicode / Tamil 16-bit All Character Encoding (TACE16) formats in Government offices and also by the general public.

5.9.5 Unicode encoding (TACE 16)

Necessary steps have been consistently taken to ensure the websites of Government departments and other organizations to adopt bi-lingual format and usage of Unicode / TACE 16 formats by them.

5.9.6 Tamil Software Development

Tamil Virtual Academy has under taken a long term Research and Development Programmes on Tamil Language Technology and Natural Language Processing (NLP) with an aim to update the existing software tools like word processor, spell checker and OCR as well as to

create various tools such as text recognizer, text summarization, speech recognizer, automatic translator. To aid the on-going Tamil linguistic research in a major way, a massive corpus development and e-dictionary creation are under progress.

Through the Tamil Nadu Innovation Initiative Scheme, a sum of Rs.1.50 crore was sanctioned to Tamil Virtual Academy towards "Development of Tamil Computing and Software". Under this scheme, the external Expert Committee has identified 15 Tamil software to be developed. Currently two projects, a Tamil Unicode Conversion Tool and 10 Tamil Unicode Fonts have been developed and launched for public use by Hon'ble Chief Minister on 23.05.2017. Development of other software are in progress.

The online Tamil Unicode Conversion Tool will ease conversion of Tamil text, tables and

statistics created in various fonts like Vanavil, etc. to Unicode, without altering their formats. The 10 Unicode Fonts can be downloaded freely from the Tamil Virtual Academy website (http://www.tamilvu.org/tkbd/index.htm), thus reducing the cost for purchase and renewal of such third party proprietary fonts.

Necessary software applications will be developed to promote the usage of Tamil in computers, cell phones, smart phones and in all kinds of electronic gadgets.

Modern Language Development tools to assist students, teachers are under progress.

5.9.7 Development of New syllabus

Tamil Virtual Academy is revising its syllabus so that the Tamil Language can be effectively taught as second language and as foreign language to the Tamil people living

across the globe and revising the syllabus according to their circumstances.

5.9.8 Training for Teachers

Considering the lack of formal teacher education of the volunteers who impart Tamil education to the children living in other countries, a new Diploma Course on Tamil Teaching for Teachers will be introduced.

5.9.9 Learning Management System

A new Learning Management System (LMS) encompassing a state-of-the-art universal language assessment tool, e-learning platform through multi-media contents, virtual class rooms and interactive learning is in development stage.

5.9.10 Mobile applications for students

To attract the younger generation in a major way, mobile applications compatible with cell phones, smart phones to impart Tamil

lessons, grammar and dictionary with multi-media content are in development stage.

5.9.11 Creative Common Licence

Based on the proposal of Tamil Virtual Academy, the Government have issued orders in G.O.(Ms.) No.105, Tamil Development & Information Department, dated 01.07.2016 ensuring "Creative Common Licence" for publishing by Tamil Nadu Government and other Quasi Government Institutions. Necessary steps have been initiated to ensure that the creative educational & scientific content, products and relevant processes created and hosted by Tamil Virtual Academy are universally available to everyone. These contents and multi-media files, products and processes will be made available under creative commons share with CC–BY-SA 4.0 Licence. All the software will be released under GNU GPL 2.0 Licence with source code.

CHAPTER - VI

ICT ACADEMY OF TAMIL NADU (ICTACT)

6.1 Introduction

ICT Academy of Tamil Nadu (ICTACT) is a pioneering venture under the Public - Private - Partnership (PPP) model that endeavors to train the College/University teachers and students in the areas of Information & Communication Technology, thereby making the students industry-ready.

ICT Academy of Tamil Nadu is a Joint Initiative of Government of India, Government of Tamil Nadu and Industries. ICT Academy of Tamil Nadu is a non-profitable autonomous organization focusing to improve the quality of students graduating from various institutions in Tamil Nadu, to make them industry-ready and immediately employable in the ICT industry.

The Academy is governed by an autonomous Board of Governors with

representatives from the State Government of Tamil Nadu and the leading companies in the ICT industry.

Consequent to the first meeting of NITI Aayog, a sub-group of Chief Ministers' for Skill Development has been formed in which the ICT Academy of Tamil Nadu has been recognized as a Model Academy for Skill Development and has been recommended for its expansion across all the States of Country.

6.2 Activities

ICTACT's activities cover several major areas as listed below:-

Figure 22

6.2.1 Faculty Development

➢ For the benefit of the College / University students, 182 Faculty Development Programs have been conducted in the State in which 5,662 faculty members have been trained.

➢ ICT Academy of Tamil Nadu has Conducted 32 Technical Seminars for students covering 9,990 Beneficiaries and various Conclaves for academicians covering 325 Beneficiaries across the State of Tamil Nadu.

➢ TCS iON – Aimed to host and promote online Skill Development and Technology Courses to students and teachers across associated Institutes through TCS iON Digital HUB platform.

➢ LearnBiz - To conduct Faculty Development Programs and provide

opportunity to the Teaching fraternity to enhance their teaching skills with new teaching methods and tools on management education.

➢ TNeGA - ICT Academy of Tamil Nadu has partnered with TNeGA on capacity building projects which will benefit both students and teachers of various educational institutions.

6.2.2 Skill Development

➢ ICTACT under its school initiatives has implemented a range of training programs with focus on enhancing the skill-set of teachers in the K-12 sector. ICT Academy of Tamil Nadu contributes to School Empowerment through its training, services, events, workshops, competitions etc. for the school teachers and students, thereby benefitting the students and teachers.

- Trained and certified 300 unemployed youth on Banking Financial Services & Insurance (BFSI) as a part of Employability Skill Program approved by Tamil Nadu Skill Development Corporation (TNSDC), Government of Tamil Nadu.

- Trained and Certified 305 graduating students on Advanced IT / ITES as a part of Employability Skill Program approved by Tamil Nadu Skill Development Corporation (TNSDC), Government of Tamil Nadu.

- Trained and certified 199 unemployed youth on Telecom Sector as a part of Employability Skill Program approved by Tamil Nadu Skill Development Corporation (TNSDC), Government of Tamil Nadu.

- Trained and certified 297 unemployed youth on Retail Sector as a part of Employability Skill Program approved by

Tamil Nadu Skill Development Corporation (TNSDC), Government of Tamil Nadu.

6.2.3 Entrepreneurship Development

➢ ICTACT partnered with Rajiv Gandhi National Institute of Youth Development (RGNIYD), Government of India for the purpose of Entrepreneurship Development and implementation of Career Guidance Projects.

➢ Salesforce – The partnership with ICT Academy of Tamil Nadu enables Salesforce programmes being implemented in ICTACT member institutions. Salesforce programs are specifically designed for Academic institutions to offer a richer learning experience thereby creating a more employable and industry-ready force.

6.2.4 Youth Empowerment

➢ ICT Academy of Tamil Nadu conducts two Annual National Level student competitions every year named 'ICTACT Youth TALK' and 'ICTACT Youth PRESENT' – Youth Summit to nurture and develop the communication, presentation and leadership skills among students. Around 25,202 students participated in these contests during 2016-17. The top 6 students selected from the contests have been taken for a 3 days fully paid educational tour to nurture their global skills.

➢ ICTACT is organizing an annual summit titled "ICTACT Youth Summit" for Youth of our State. During 2016-17, ICTACT has conducted Youth Summit in 2 cities (Chennai and Coimbatore) of Tamil Nadu.

6.2.5 Research and Publications

ICT Academy of Tamil Nadu has been publishing the following peer reviewed scholarly Journals once in 3 months (quarterly).

- ICTACT Journal on Communication Technology (IJCT)

- ICTACT Journal on Image and Video Processing (IJIVP)

- ICTACT Journal on Soft Computing (IJSC)

- ICTACT Journal on Micro Electronics (IJME)

- ICTACT Journal on Management Studies (IJMS)

a) The Index Copernicus Value (ICV) for ICTACT International Journals

ICTACT Journal on Communication Technology (IJCT)	62.08
ICTACT Journal on Soft Computing (IJSC)	78.42
ICTACT Journal on Image and Video Processing (IJIVP)	63.80

b) Global Impact Factor for ICTACT Journals

ICTACT Journal on Communication Technology (IJCT)	0.788
ICTACT Journal on Soft Computing (IJSC)	0.787
ICTACT Journal on Image and Video Processing (IJIVP)	0.786

ICTACT Journals are listed / hosted in internationally recognized indexing databases / sources like Directory of Open Access Journals (DOAJ), Index Copernicus, Inspec (IET), EBSCO Host, Google Scholar, J-Gate, Cite Factor, Research Bib, etc. To maintain the quality of the Journals, ICTACT works alongside some of the prominent and experienced experts, researchers in various disciplines across the globe.

6.2.6 Digital Empowerment

➢ The Digital India vision promises to transform India into a fully connected knowledge economy offering world class services at the click of a mouse. The vision aims to change the life in Rural India by making every citizen a netizen who will be

a fully empowered citizen. Inspired by the vision, ICTACT has been implementing various programs to strengthen and contribute towards success of the Digital India vision.

➢ ICTACT has organized a "ICTACT Digital Literacy Certification Drive" during the period June 2016 to December 2016 with an objective to assess and certify individuals on "Appreciation of Digital Literacy – Level 1" under the National Digital Literacy Mission (NDLM) program of the Government of India, ICTACT being the assessment and certification partner of NDLM.

➢ "ICTACT Digital Literacy Certification Drive" enables all Industry Members and ICTACT Member Institutions to get all their Digital Literacy trained individuals assessed and certified through ICTACT.

6.2.7 Industry - Institute Interaction

➢ ICT Academy of Tamil Nadu has conducted 3 Industry Institute Interaction Conferences (Bridge) in 3 cities viz. Chennai, Madurai and Coimbatore covering 2,876 Beneficiaries.

➢ VMware has partnered with ICTACT to provide VMware IT Academy programs, online hand holding on labs, video classes, faculty training etc. In specific, VMware will deliver VMware Faculty Development Programs and Student Skill Development Programs for Computer Science, Information Technology and Computer Application streams. In addition, ICTACT will be the regional IT Academy for VMware and will set up VMware IT Academies in 100 colleges across India.

➢ Autodesk has partnered with ICTACT to provide free access of Autodesk Software Suites, Learning Resources and Training

and Global Certifications to ICTACT member institutions in the State of Tamil Nadu.

➤ Hortonworks has partnered with ICTACT to provide access to the Horton works materials and also to purchase books directly from their vendor. In addition, their optional certification exams will be available for ICTACT.

➤ EMC Academic Alliance and ICTACT has partnered to establish 50 centers of Academic Excellence in the State during the year. These Centers of Academic Excellence will be set up in leading IT Institutes as identified by ICTACT across the State to provide students with an opportunity to learn and practice key skills in the areas of Cloud, Data Science, Analytics, IT Infrastructure and other leading Technologies. EMC through its Academic Alliance initiative, will offer the

technical expertise, resources, and study materials required for setting up the centers.

➢ ICTACT has partnered with Palo Alto Networks as Authorized Academy Center to provide classroom and technical training on Firewall Installation, Advanced Firewall Troubleshooting and Advanced Threat Management.

➢ ICTACT is an Authorized Training Partner of Telecom Sector Skill Council (TSSC) to conduct courses in Telecom as per Skill Sector Council Standards.

➢ ICTACT participated in Global Investors Meet (GIM) 2015, and played a supportive role in attracting investors for the State by conducting various workshops, conferences and seminars across the nation.

6.3 ICTACT Awards

➢ ICTACT, on its mission to empower students and faculty members, finds a need to recognize and reward the actual contributors to their education ecosystem.

➢ ICTACT Academic Partner Excellence Awards, ICTACT Best Coordinator Awards are awarded for the member institutions of ICTACT to recognize their valuable and effective relationship with ICTACT. The Techno awards are to encourage effective use of technology in teaching and nominations are invited from academicians across the country. ICTACT Student Innovator Award is awarded to encourage the student community on their innovations.

➢ The winners are awarded at the flagship event, ICTACT Bridge. So far, ICTACT have recognized 50+ faculties and institutions in the last five years.

6.4 Government Projects completed in 2016-17

ICT Academy having developed its training capabilities, has been serving the Government Departments on providing training to its employees specifically in the areas of ICT and e-Governance. ICTACT has been involved and is part of various Government Projects. Some of the projects undertaken for the Year 2016-2017 are as follows.

S. No	Name of the Project	Department
1	Employability Skill Training for 100 Students in Social Welfare Homes (Letter. No-35720 /1(2)/2016, SW & NMP Dept, Dated 21.02.2017)	Department of Social Welfare and Nutritious Meal Program, Government of Tamil Nadu
2	Employability Skill Training for 1000 SC/ST Students across India (Letter No. DIR/ ICT/003/2014, Ministry of Youth Affairs and Sports, Dated10/09/2015)	Rajiv Gandhi National Institute of Youth Development, Ministry of Youth Affairs & Sports, Government of India
3	Employability Skill Training for 300 Graduating Youth in Advanced IT & ITES Skills (G.O.(Ms).No.204, L&E (S2) Dept, dated 11.12.2015)	Tamil Nadu Skill Development Corporation (TNSDC), Government of Tamil Nadu

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4	Vocational Training Program for 3332 graduating College students under Rashtriya Uchchatar Shiksha Abhiyan (RUSA) Scheme (Letter Rc. No. 2862 / SDC-4/2016, TNSDC, Dated 24.04.2017)	Tamil Nadu Skill Development Corporation (TNSDC), Government of Tamil Nadu
5	IT Skills, English Language and Office Management for 100 unemployed youth (Letter No.Rc.2073 / 14 / B3, TNWC, Dated 30.08.2016)	Tamil Nadu Warehousing Corporation, Government of Tamil Nadu
6	Adi Dravidar Teachers Training on English Communication Skills for 712 Teachers (G.O. (Ms). No. 19/AD & TW, (SCP – 2) Dept, dated 24.03.2017)	Tamil Nadu Adi Dravidar Housing and Development Corporation, Government of Tamil Nadu

6.5 State Government Projects being implemented in 2017-2018

S. No	Name of the Project	Department
1	Hon'ble Minister for Information Technology - Announcement – 2016-2017 Free Membership Services of ICT Academy of Tamil Nadu for 130 Government Engineering, Arts and Science Colleges (G.O.(Ms).No.29, IT(ADMIN.1), dept dated 15.12.2016)	Department of Information Technology , Government of Tamil Nadu

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2	Hon'ble Minister for Information Technology - Announcement – 2016-2017 Training for 1000 graduating College Students on IT and Soft Skills by ICT Academy of Tamil Nadu (G.O.(Ms).No.67, L&E (S2) dept, dated 12.04.2017)	Tamil Nadu Skill Development Corporation (TNSDC), Government of Tamil Nadu
3	Employability Skill Training Program for 1200 graduating College Students (Proc. No. T2/9569/2016, TAHDCO dated 05.05.2017)	Tamil Nadu AdiDravidar Housing and Development Corporation Limited , Government of Tamil Nadu
4	Basic Computer Operation Training Program for 30 staff members of Tamil Nadu House, Delhi (Lr.No. K/15/ 11/2016, TNeGA, dated 09.06.2017)	Tamil Nadu e- Governance Agency, Government of Tamil Nadu

Chapter - VII

Tamil Nadu FibreNet Corporation Limited (TANFINET)

The Government of Tamil Nadu is partnering with the Government of India (GOI) to create a State-wide Optical Fibre Network and thereby provide Broadband Network Connectivity to all Households. BharatNet is planned to provide the Network connectivity only from the Block to Village level and Tamil Nadu FibreNet as per the vision of Government of Tamil Nadu, is planned to provide the Network connectivity throughout the State. This Broadband network connectivity can be used for providing triple play service (Voice, data & Video), bandwidth to e-Sevai centres etc.

In order to develop, execute, own, operate and maintain the Optical Fibre Network, the Government have issued orders on 01.02.2016 for the formation of Tamil Nadu FibreNet Corporation Limited (TANFINET) with a Share

Capital of Rs. 50 Lakhs. The objective is to create TANFINET in the most commercially viable manner, exploiting certain inherent strengths of our State and thus try to create a State-wide information highway in the quickest time frame possible.

Subsequently, a Tripartite Memorandum of Understanding (MoU) with Government of India and M/s. Bharat Broadband Network Limited (BBNL) for the implementation of BharatNet project in Tamil Nadu was signed in April, 2017. As per the terms of the MoU under the second phase of BharatNet, Optical Fibre Cables will be laid aerially along the power lines between the Block headquarters and Village Panchayats. Government of India have released a sum of Rs.3.85 crore towards 50% of Survey Cost. At present, survey of poles from Village Panchayat Service Centres to BSNL Exchanges is under progress across the State. After completion of the survey, Detailed Project Report (DPR) will be

prepared and forwarded to GoI for further action. In the next phase of operations, underground cables will also be laid and a Ring Architecture will be used to ensure disruption-free networks.

An In-House Team (IHT) has been created with the nominees from Tamil Nadu Infrastructure Fund Management Corporation Ltd (TNIFMC), Tamil Nadu Arasu Cable TV Corporation Limited (TACTV), Tamil Nadu Transmission Corporation Limited (TANTRANSCO) and Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) and is headed by an eminent expert to finalize and recommend the proposed structure of TANFINET. The Memorandum of Association (MoA) / Articles of Association (AoA) for the formation of TANFINET are under preparation.

Figure 22: MOU for Bharatnet

CHAPTER - VIII

AWARDS

8.1 Awards instituted by the Government of Tamil Nadu

8.1.1 Hon'ble Chief Minister's Award for Excellence in e-Governance for Government Departments

Government of Tamil Nadu announced that as a mark of recognition and encouragement, the Departments which strive towards e-Governance successfully will be awarded the "Chief Minister's award for Excellence in e-Governance" every year.

Nominations received from the Government Departments and Districts are being scrutinized by the Scrutinizing Committee. After scrutiny, the same will be submitted to Selection Committee for finalising the awards. Similar process and procedure will be adopted for every year.

8.1.2 Hon'ble Chief Minister's Award for Excellence in e-Governance for Students

Government of Tamil Nadu has announced "Chief Minister's Award for Excellence in e-Governance" to encourage and create an awareness on e-Governance among the youth, Students and e-Governance enthusiasts.

Nominations have been invited to participate in all the categories. The selection of awardees will be in II tiers (i) District Level, (ii) State Level.

District Level selection process is completed. State level awards Selection Committee would be convened and awards will be finalised shortly.

8.1.3 Tamil Nadu e-Governance Award for MSME

Government of Tamil Nadu has announced the e-Governance Award for Micro Small and Medium Enterprises (MSME). It aims at

recognizing and promoting outstanding e-Governance (ICT) Solutions and Applications, thereby encouraging Innovation and Excellence among Tamil Nadu ICT Talents and enterprises in their constant pursuit for creative and better solutions to meet social needs.

Nominations have been invited to participate in all the categories.

8.2 Awards received by IT Department

8.2.1 Chief Minister's Best Practices Award 2015

The service rendered to the Citizens by the 'Arasu e-Sevai Centres' has been recognised and awarded with the Best Practices Award for Good Governance by the Hon'ble Chief Minister during the Independence Day Celebrations, 2015.

8.2.2 "WEB RATNA" Award 2014

The Web Portal of Government of Tamil Nadu, www.tn.gov.in has won the **"Web Ratna Award 2014"** in **"Gold Icon"** category. The

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Award category aims to acknowledge the State/UT of India which has displayed exemplary initiative in establishing comprehensive web presence. The selection criteria include the overall quality and quality of web based initiatives, the spectrum of Sectors/Departments having good web presence and the level of responsiveness towards web based queries by Citizens.Aspects of usability and accessibility are also considered. The Award was presented by Department of Electronics & Information Technology, Government of India.

8.2.3 "WEB RATNA" Award 2016

The Web Portal of Tamil Nadu, **www.tn.gov.in** won the **"Web Ratna Award 2016"** in **"Gold Icon"** category. The Award acknowledges the State for displaying exemplary initiative in establishing comprehensive web presence and display the level of accountability in terms of quantity, quality, spectrum of

coverage and innovation in order to ascertain user satisfaction.

Through the Web Portal, Government of Tamil Nadu has implemented several e-Governance projects aimed at delivering various G2C, G2B, G2E and G2G services in a hassle free manner.

These online services cover every aspect of citizens daily life and can be accessed on anytime anywhere basis. Also, various online applications such as Tamil Nilam, e-Pension integrated with Jeevan Pramaan, Crime and Criminal Tracking Network Systems, Adi-Dravidar Scholarship and College Scholarship Program, e-District Services and e-Payment System for Registration Department, etc. were operational successfully.

The Award was presented by Department of Electronics and Information Technology, Government of India.

8.2.4 Award to TACTV for printing highest number of Aadhaar Cards - 2016

Tamil Nadu Arasu Cable TV Corporation is operating Aadhaar Permanent Enrolment Centres (PECs) and e-Sevai Centres across the State.It has installed Aadhaar plastic card printers in all these centres. Residents with Aadhaar number will be able to walk in and print a plastic card. They will have to pay Rs.30 for a plastic Aadhaar Card. TACTV has won the Award for printing and distributing the highest number of Aadhaar cards in 2016.

8.2.5 "e-Governance Award" for Directorate of e-Governance & Tamil Nadu e-Governance Agency in Connect 2016

Tamil Nadu e-Governance Agency (TNeGA) is a State Nodal Agency formed to support and drive all e-Governance initiatives of the Government of Tamil Nadu. TNeGA is implementing various e-Governance projects with the objective of making all Government

services, wherever feasible & accessible to the common man in an efficient and transparent manner. The e-Governance initiatives of the TNeGA provides a hassle-free system for over 140 public welfare services improving the quality, accessibility and effectiveness of Government services for citizens and businesses implemented with the help of IT at 10,000 computer centres throughout the State. In recognition of Directorate of e-Governance & Tamil Nadu e-Governance Agency's effective use of IT, CII-Connect 2016 conferred it with the "e-Governance Award".

Dr. M. MANIKANDAN
Minister for Information
Technology

Inauguration of State Residential Data Hub (SRDH) & Tamil Nadu Geographical Information System (TNGIS) Portal of TNeGA by Hon'ble Chief Minister on 5.8.2016.

Inauguration of Administrative-cum-IT Building at Salem and Administrative Building at Coimbatore IT Park by Hon'ble Chief Minister on 23.05.2017.