INFORMATION TECHNOLOGY DEPARTMENT

POLICY NOTE
2019 – 2020

DEMAND NO. 31

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Minister for Information Technology

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Government of Tamil Nadu

2019

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CHAPTER -1

REIMAGINING GOVERNANCE

Among the many functions of any Government, evolving policies on various fronts, moving files and taking decisions in pursuance of those policies, delivering services, providing employment opportunities, enabling businesses to thrive, maintaining law and order, etc., would be the top priorities. With the large-scale use of Information and Communication Technologies (ICT) in every aspect of governance, starting a couple of decades back, these functions have leap-frogged to hitherto unimaginable levels of efficiency in governance and concomitant citizen

satisfaction. Expectations of better and better governance have also increased among our Citizens, as is evidenced by their aspirations frequently aired through the social media. Tamil Nadu has been in the forefront in using and consuming ICT for the larger benefit of its Citizens. Every Department/Agency of the Government of Tamil Nadu have taken proactive steps in this direction and the results are there for all to see. Huge investments have been made in creating IT infrastructure and developing end to end application software. Huge investments have also been made in parallel, to make Tamil Nadu a destination of choice for IT/ITeS investors from across the world. No wonder then, that Tamil Nadu is

considered a State to look up to, insofar as ICT and its use cases are concerned. Hence, this is a good time to look back at the achievements and look forward to furthering this cause, using the Emerging Technologies.

The Information Technology Department through the Electronics Corporation of Tamil Nadu (ELCOT), has been in the forefront of IT promotion, procurement of IT products and services, e-Governance and establishing state of the art IT infrastructure. Tamil Nadu is today considered a powerhouse in promoting employment opportunities to our very talented young population, as large and small IT companies have established their base in Tamil

Nadu, thanks to the proactive ICT and industrial policies of the Government. Tamil Nadu has seen the burgeoning of more than 500 engineering colleges, internet bandwidth, health and educational facilities, air, sea and road transport facilities and social infrastructure in Chennai, tier-II and III locations spread across Tamil Nadu. A new ICT policy, a draft Electronics Hardware Manufacturing Policy, IT SEZs across Tamil Nadu, Rural BPO Policy, distribution of laptops to students, creation of IT infrastructure, creation of a Centre of Excellence in Fintech, participation in National and International events and roadshows, promotion of Startups, skill development through ICT Academy of Tamil

Nadu, etc. are giving a further fillip to IT promotion in Tamil Nadu.

Tamil Nadu has been a pioneer in e-Governance and the Information Technology Department, through the Tamil Nadu e-Governance Agency (TNeGA), ELCOT and the National Informatics Centre (NIC) have been spearheading this movement. Citizens are benefitting from end-to-end computerization of Government processes that has enabled them to receive services through Arasu e-Sevai Centres or on their desktops or smart phones. Now, TNeGA by establishing a Centre of Excellence in Emerging Technologies (CEET), has taken a huge step forward by taking advantage of the **Emerging Technologies** like blockchain,

artificial intelligence, machine learning, Internet of things, drones, augmented reality, virtual reality, additive manufacturing, analytics, geographic information system (GIS), etc. for solving pressing governance issues that were hitherto unsolved. Innovation is the key to using these technologies and young minds running startups revel in them to create products, processes and patents for the private sector. We deem it fit to use their innovative mind set and entrepreneurial skills, to come out with solutions for governance related problems also. The power of these technologies and the innovative thought processes in garnering its benefits will be unleashed in the near future. A State Family Database (SFDB) that is being created will

ensure correct targeting of individual beneficiaries and households while extending Government welfare schemes. ERP driven Offices, predictive and data driven governance will become the order of the day. The right data is key to taking the right decisions, so that scarce resources are put to optimum use. Tamil Computing will also get a fillip through the Tamil Virtual Academy (TVA) as they exploit emerging technologies.

While, the tools of ICT bring huge benefits to governance and society, it also has its own pitfalls. Hence, e-Governance and e-Security should go together. The Government of Tamil Nadu has taken a huge step towards ensuring e-security of Government transactions by

creating a Cyber Security Architecture for Tamil Nadu (CSA-TN). This will culminate in the creation of CERT-TN (Computer Emergency Response Team – Tamil Nadu), SOC-TN (Security Operations Centre – Tamil Nadu), CCMP-TN (Cyber Crisis Management Plan – Tamil Nadu) and SAF-TN (Security Architecture Framework – Tamil Nadu).

For any e-Governance activity, the backbone is the IT infrastructure which includes the State Data Centre, State Disaster Recovery Centre, Cloud Infrastructure, State Wide Area Network, State Portal, etc., with bandwidth being the critical component. While huge investments have been made in this area, it is imperative that we move forward subsuming

latest trends and technologies in this sector. A Special Purpose Vehicle called the Tamil Nadu FibreNet Corporation (TANFINET) has been established to implement a 55,000 km optical fibre network under the BharatNet and TamilNet projects which will ensure atleast 1 Gbps connectivity to each of the 12,524 Village Panchayats, 528 Town Panchayats, 121 Municipalities and 15 Corporations. This will be a game changer for the larger benefit of our citizens enabling them to transact with Government from the comfort of their homes. This will also be inconformity with Sustainable Development Goals (SDG) of the United Nations. Every Government Department / Agency will be enabled to enhance their

application software in order to improve efficiency within their system and also for providing more efficient services to our Citizens. Tamil Nadu Arasu Cable TV Corporation (TACTV) which provides digital cable TV services to our Citizens, will in the near future also provide IPTV services, Over The Top (OTT) services and Internet connectivity to rural and urban households, taking advantage of the BharatNet and TamilNet infrastructure respectively.

Thus, we are seeing a paradigm shift in the way Government has been using the tools of Information Communication Technology for bringing in efficiency in the Government process as also for providing efficient services to our Citizens at their doorsteps. The Information

Technology Department, will, with the support of all Government Departments / Agencies, MeitY, our numerous partners and stakeholders in the public sector, like NIC, CDAC, STPI, SETS, STQC, IITMRP, partners in the private sector like NASSCOM, CII, FICCI, MCC, ELCINA, MAIT, consultancies, startups and software companies etc. will lead this paradigm shift and give necessary fillip to all Government Departments / Agencies, right from the Village Office to the Secretariat, to be **future ready**, with the ultimate objective of creating an ecosystem that will engender a **Knowledge Driven Governance System** and a **Knowledge Driven Society**.

CHAPTER - 2

ELECTRONICS CORPORATION OF TAMIL NADU LIMITED

1. Introduction

Electronics Corporation of Tamil Nadu, commonly known as ELCOT, registered under Companies Act, 1956 on 21.03.1977 is a wholly owned Public Sector Undertaking of the Government of Tamil Nadu constituted with the main objective of assisting development of electronics in the State. Since inception, ELCOT had contributed to the growth of Electronics Industry in the State by promoting many Joint Ventures, Associate Ventures etc. Keeping with the trend post liberalisation and globalisation, ELCOT gradually re-engineered itself as a

procurement agency, primarily for Electronics and IT/ITES products and services. Later, ELCOT branched out to establish IT Special Economic Zones (SEZs) and has set-up 8 IT SEZs in Chennai and in Tier-II cities of the State viz., Coimbatore, Madurai, Tiruchirappalli, Salem, Tirunelveli and Hosur, in about 1321.61 acres of land at a total investment of about Rs.562.11 crore, providing direct employment opportunities to about 77,000 persons.

ELCOT has also created IT infrastructure including Tamil Nadu State Wide Area Network (TNSWAN), Tamil Nadu State Data Centre (TNSDC), Disaster Recovery Centre (DRC), Cloud etc.

2.   Vision

To assist the Government in establishing Tamil Nadu as an e-Enabled State.

3.   Mission

a. Building a Brand image of Tamil Nadu as a modern state, an attractive location for people and businesses.

b. Elevating Tamil Nadu as the destination of choice for IT Investors across the world.

c. Being the preferred vendor of choice for procurement of IT products and services.

4. Objectives

a. To take up IT promotion to make Tamil Nadu a preferred destination of choice for investors

b. To become the key procurement agency for IT hardware / software and providing consultancy for Government Departments.

c. Providing IT Infrastructure to Government Departments.

d. Providing IT Manpower Support to the Government Departments.

5.   Administrative Setup

ELCOT - ORGANISATION CHART
ADMINISTRATIVE SETUP

CHAIRMAN

BOARD OF DIRECTORS

MANAGING DIRECTOR

(DIVISIONS)

HR | FINANCE & ACCOUNTS | SECRETARIAL & LEGAL | PROJECTS | PROCUREMENT | IT-INFRA | E-Gov/TSG | IT (PAC) | NETWORKS

EACH DIVISION CONSISTS OF FOLLOWING ORGANIZATIONAL SETUP

GM
↓
DGM
↓
MANAGER
↓
DM-I
↓
DM-II
↓
SECTION

6.   Administrative Reforms

During the year 2018-19, ELCOT undertook an amendment to the Service Rules which has been pending for more than 17 years, after merger of its Perungudi Factory Unit with it's Corporate Office, to accommodate the factory employees who were absorbed by the Corporate Unit, post-merger. Approval for the amendments as suggested by the Board of ELCOT was accorded by the Government vide G.O. (Ms) No.4, Information Technology (Admn.1) Department, dated 06.03.2019.

Consequently, the staff and officers of ELCOT were awarded promotions which were

pending for more than 20 years at the intervention of this Government.

7. e-Interventions in ELCOT

7.1. e-Office

ELCOT has been using a customised Enterprise Resource Planning (ERP) for the last few years.

7.2. e-Procurement

ELCOT procures all its products and services through an online system.

7.3. e-Attendance

The e-Attendance System has been established in ELCOT during 2015, using the Biometric finger print device. The e-Attendance System is integrated with Access Control System.

7.4. e-Review

ELCOT is developing a software for reviewing the projects handled by five HODs (ELCOT, TNeGA, TACTV, TVA and TANFINET) under the control of Information Technology Department.

8. Activities

8.1. Procurement

ELCOT is an optional procurement agency for procuring hardware, software and networking requirements of Government Departments, State Public Sector Undertakings and State Autonomous Bodies as per G.O.(Ms.) No.58 of Finance (BPE) Department, dated 16.02.1999.

8.2. ELCOT e-Market (a single window procurement portal)

Creation of an ELCOT e-Market portal (https://emarket.elcot.in) enables Government Departments / Agencies to generate digitally

signed Proforma Invoice (Estimate) online, get administrative, financial sanction and provide funds for procurement. The departments can pay and track the transaction online from "Fund to Re-fund". Vendors can also transact their business online from "Order to Payment".

8.3. IT Promotion and Development

Since the advent of the IT revolution, ELCOT has been a pioneer in showcasing Tamil Nadu as the preferred destination for IT / ITeS investments. Towards achieving this objective, the Hon'ble Chief Minister released the new ICT policy on 10.09.2018.

Figure–1: ICT Policy Released by Hon'ble Chief Minister

8.4. Global Investors Meet (GIM) 2019

ELCOT was successful in bringing in an investment of around Rs.11,974crorein the IT/ITeS Sector during the recently concluded GIM 2019.

Apart from this, the following proactive initiatives have been taken by ELCOT:-

1. Established IT/ITeS SEZs across Tamil Nadu including Tier-II Cities.

2. Facilitates and participates in National and International prestigious ICT events / road shows to promote Tamil Nadu as the destination of choice for IT investment.

3. Issue NOC for promoting necessary physical infrastructure like IT Park / Building.

4. Established Startup Warehouses to promote Technology Start-ups by young entrepreneurs.

5. Establishing Tech Forums in emerging technologies like Block chain, AI / ML, Drones, AR / VR, Robotics, IoT, Data Analytics etc.

8.5. Facilitation for IT/ITeS Companies

ELCOT handholds/facilitates IT/ITeS companies for obtaining all the approvals required for establishing their facility.

8.6. ELCOT Special Economic Zones (ELCOSEZs)

ELCOT has developed 8 IT/ ITES SEZs in the Tier-I & Tier-II locations, to ensure an even spread of IT/ITeS industry across Tamil Nadu.

1. Sholinganallur in Chennai

2. Vilankurichi in Coimbatore

3. Ilandhaikulam in Madurai

4. Vadapalanji in Madurai

5. Navalpattu in Tiruchirappalli

6. Gangaikondan in Tirunelveli

7. Jagirammapalayam in Salem

8. Viswanathapuram in Hosur

ELCOT has created necessary common infrastructure work viz., formation of internal roads, cable ducts, storm water ducts, compound wall etc., in these ELCOSEZs, and leased out land to IT/ITeS companies. ELCOT has also constructed IT buildings in these ELCOSEZs except Chennai and Coimbatore and facilitates IT/ITeS companies looking out for office space, on rental basis. These ELCOSEZs have attracted considerable investment, employment generation and exports in the State.

8.6.1. ELCOSEZ – Sholinganallur, Chennai

ELCOT has established an ITSEZ at Sholinganallur in Chennai, in an extent of 377.08 acres of land at an investment of Rs.198.55 crore.

For improving the facilities in this ELCOSEZ further, additional infrastructure works are currently being carried out at a cost of Rs.36.05 crore during the year 2019-2020.

In this ELCOSEZ, 259 acres of land were allotted on lease basis to the following companies:-

S. No.	Company	Land Allotted (in acres)
1	M/s. Wipro Ltd.	80
2	M/s. HCL	50
3	M/s. Satyam	50

S. No.	Company	Land Allotted (in acres)
	(M/s.TechMahindra)	
4	M/s. Ford MotorPvt. Ltd.	28
5	M/s.Cognizant Technologies Solutions Pvt. Ltd.	20
6	M/s.Sutherland Global Services Ltd.	15
7	Tamil Nadu Electricity Board	16

- In this ELCOSEZ, 5 companies have established their facility in a built-up area of 109.31 lakh sq.ft. and are in operation with 57,525 employees.

- The Global Technology and Business Center of M/s.Ford Motor Pvt. Ltd. established in this ELCOSEZ was inaugurated by the Hon'ble Chief Minister

of Tamil Nadu during Tamil Nadu Global Investors Meet 2019 on 23.01.2019 and currently is in operation.

- M/s.Wipro is constructing a 9.50 lakh sq.ft. IT building for expanding their facility in this ELCOSEZ.

M/s. HCL, ELCOSEZ, Sholinganallur, Chennai

Figure-2 : M/s. Ford, ELCOSEZ, Sholinganallur, Chennai

- Based on the announcement of the Hon'ble Chief Minister of Tamil Nadu, the construction of 2.33 lakh sq.ft. ELCOT IT Tower is in progress at an estimated cost of Rs. 83.73 crore and is expected to be completed by the end of 2020.

8.6.2. ELCOSEZ-Vilankurichi, Coimbatore

ELCOT has established an IT SEZ at Vilankurichi Village in Coimbatore, in an extent of 61.59 acres of land at an investment of Rs.72.50 crore.

In this ELCOSEZ, 19 acres of land were allotted on lease basis to the following companies:-

S. No	Company	Land Allotted (in acres)
1	M/s. WIPRO Ltd.	9.5
2	M/s. Tidel Park Coimbatore Limited	9.5

M/s. WIPRO, ELCOSEZ, Coimbatore

Figure-3 : M/s. TPCL, ELCOSEZ, Coimbatore

These two companies have created their facility by constructing 23 lakhs sq.ft. IT building and are in operation with 13,500 employees.

- As per announcement of Hon'ble Chief Minister, ELCOT is planning to construct an IT Tower for an extent of 2.50 lakh sq.ft. at an estimated cost of Rs.110 crore.

8.6.3. ELCOSEZ-Ilandhaikulam, Madurai

ELCOT has established an IT SEZ at Ilandhaikulam Village, Madurai, in an extent of 28.91 acres of land at an investment of Rs.34.41 crore.

In this ELCOSEZ, 20.89 acres of land were allotted on lease basis to the following companies:-

S.No	Company	Land Allotted (in acres)
1	M/s. Honeywell Technologies Ltd.	11.25
2	M/s. HCL Info Systems Ltd.	6.75
3	M/s. Chella Software Pvt. Ltd.	2.25
4	M/s. Rebar Design & Detail Pvt. Ltd.	6,000 sq.ft
5	Tamil Nadu Electricity Board	0.58

- M/s. Honeywell Technologies Ltd. & M/s. HCL Info Systems Ltd. have constructed 7.06 lakh sq.ft. IT building and are in operation with 4,109 employees.

- In the ELCOT IT building, 60,205 sq.ft. space has been allotted to the following companies and functioning with 817 employees:-

S. No.	Company	Space Allotted (in Sq.ft.)
1	M/s. Galaxy Infotech	2,508
2	M/s. AMBC Technologies Pvt. Ltd.	3,277
3	M/s. Sai BPO Services Ltd.	15,181
4	M/s.Neeyamo Enterprises Solutions Private Ltd.	30,103
5	M/s. CVIAC Consulting	9,136

- 100% of land and building have been allotted by ELCOT in this ELCOSEZ.

**ELCOT IT Building, ELCOSEZ,
Ilandhaikulam, Madurai**

**Figure-4 : M/s. Honeywell, ELCOSEZ
Ilandhaikulam, Madurai**

8.6.4. ELCOSEZ – Vadapalanji, Madurai

ELCOT has established an IT SEZ at Vadapalanji village, Madurai, at an investment of Rs.66.51 crore in an extent of 245.17 acres of land, out of which SEZ approval is accorded for an extent of 213 acres.

Figure-5 :

Inauguration of Infrastructure works and Rail Over Bridge at ELCOSEZ-

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- In this ELCOSEZ, ELCOT has made allotment of 142 acres of land in SEZ area and 25 acres of land in Non-SEZ area on lease basis to the following companies.

S. No	Company	Land Allotted (in acres)
SEZ Area		
1	M/s. HCL	60
2	M/s. Satyam (M/s.TechMahindra)	50
3	M/s. Chain-Sys. Software Exports Pvt. Ltd.	20
4	M/s. Sutherland Global Services Ltd.	5
5	M/s. Caliber Point	5
6	M/s. Health Plan System (India) Pvt. Ltd.	2

S. No	Company	Land Allotted (in acres)
Non-SEZ Area		
1	M/s. Empire Photovoltaic Systems Pvt. Ltd.	25

- A 70,139 sq.ft. Administrative-cum-IT Building constructed by ELCOT, with an investment of Rs.23 crore, was inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 05.03.2019.

Figure-6 : Inauguration of ELCOT IT Building at ELCOSEZ-Vadapalanji, Madurai by Hon'ble Chief Minister

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- A Tech Forum in Emerging Technologies like Blockchain, Artificial Intelligence, IoT, Machine Learning, AR / VR, Robotics, Data Analytics etc., is proposed in this IT Park.

Figure-7 :

ELCOT IT Building, ELCOSEZ, Vadapalanji, Madurai

8.6.5. ELCOSEZ–Navalpattu, Tiruchirappalli

ELCOT has established an IT SEZ at Navalpattu village, Tiruchirappalli, at an investment of Rs.60.08 crore in an extent of 147.61 acres of land to ELCOT out of which SEZ approval is accorded for an extent of 123.23 acres.

- ELCOT has made allotment of 34 acres of land in SEZ area and 2 acres of land in Non-SEZ area on lease basis to the following companies

S. No	Company	Land Allotted (in acres)
SEZ Area		
1	M/s. Sutherland Global Services Ltd.	10
2	M/s. WNS Global Services (P) Ltd.	5
3	M/s. Zylog Systems Ltd.	5
4	M/s. Unlimited Innovations India Pvt. Ltd.	5

5	M/s. Assyst International Pvt. Ltd.	3
6	M/s. i Link Multitech Solutions Pvt. Ltd.	2
7	M/s. Vdart Technologies	2
8	M/s. Health Plan Systems (India) Pvt. Ltd.	2
Non-SEZ Area		
1	M/s. HCL Infosystems	2

- In the ELCOT IT building, 59,960 sq.ft. space has been allotted to the following companies and functioning with 1535 employees.

S.No	Company	Space Allotted (in Sq.ft.)
1	M/s. i Link Systems Pvt. Ltd	6,668
2	M/s. Scientific Publishing Company	30,250
3	M/s. Vuram Technology Solutions Pvt. Ltd.	5,976

S.No	Company	Space Allotted (in Sq.ft.)
4	M/s. Vdart Technologies	3,643
5	Tamil Nadu Disaster Recovery Centre	5,963
6	M/s. GI Tech Gaming Co. India Pvt. Ltd.	4,919
7	M/s. VR Della IT Services P. Ltd.	2,541

100% occupancy is achieved in rental space in ELCOT IT Building in this ELCOSEZ.

Figure-8 :

ELCOT IT Building, ELCOSEZ Navalpattu, Trichy

- As per the announcement of Hon'ble Chief Minister, ELCOT is planning to construct an IT Tower in this ELCOSEZ for an extent of 1.00 lakh sq.ft. at an estimated cost of Rs.40.00 crore.

8.6.6. ELCOSEZ-Gangaikondan, Tirunelveli

ELCOT has established an IT SEZ at Gangaikondan village, Tirunelveli, at an investment of Rs. 55.88 crore in an extent of 500 acres, out of which SEZ approval is accorded for an extent of 290 acres.   An administrative-cum-IT building is also constructed by ELCOT in an extent of 56,720 sq.ft. and ready for occupancy.

- In this ELCOSEZ 112 acres of land in SEZ area and 25 acres of land allotted in the Non-SEZ area to the following companies on lease basis.

S. No.	Company	Land Allotted (inacres)
SEZ Area		
1	M/s. Syntel International Pvt. Ltd. (M/s. Atos Syntel)	100
2	M/s Sutherland Global Services Ltd.	10
3	M/s. Deccan I Services	2
Non-SEZ Area		
1	M/s. A & D Cosmic Power	25

- M/s. Syntel International Pvt. Ltd (M/s. Atos Syntel) has constructed a 2.60 lakh sq.ft. IT building and has formally inaugurated on 29.04.2019.

M/s. Syntel International Pvt. Ltd (M/s. Atos Syntel)ELCOSEZ, Gangaikondan, Tirunelveli

Figure-9 :

ELCOT IT Building, ELCOSEZ, Gangaikondan, Tirunelveli

8.6.7. ELCOSEZ-Jagirammapalayam, Salem

ELCOT has established an IT SEZ at Jagirammapalayam village, Salem, in an extent of 53.33 acres of land at an investment of Rs.40.53 crore.

- ELCOT has made an allotment of 27.62 acres of land on lease basis to the following companies:

S. No	Company	Land Allotted (in acres)
1.	M/s. Mahima Technologies Pvt. Ltd.	3
2.	M/s. Vee Technologies	9.49
3.	M/s. GTP Infotech Solutions Ltd.	2.5
4.	M/s. Senovate Infotech Pvt. Ltd.	1.25
5.	M/s. TANTRNSCO Ltd.	7.88
6.	M/s. eMudhra Ltd.	2.5
7.	M/s Anmol Technologies Pvt. Ltd.	1

- M/s. Vee Technologies has constructed around 20,000 sq.ft. IT Building and operating with 300 employees.

Figure-10 :
Inauguration of ELCOT IT Building at ELCOSEZ-Jagirammapalayam,
Salem by Hon'ble Chief Minister

- Out of 62,174 sq.ft. space in ELCOT IT building 34,050 sq.ft. space has been allotted to the following companies

S. No.	Company	Space Allotted (in Sq.Ft.
1	M/s. Sennovate Infotech Pvt. Ltd.	3,500
2	M/s. Memsys TechnologiesPvt.Ltd.	3,448
3	M/s. Vee Imaging Solutions Pvt. Ltd.	10,562
4	M/s. Knowledge Lens Private Ltd.	1,000
5	M/s.Dilogy Solutions LLP	1,000
6	M/s. StinSoft Technologies Private Ltd.	989
7	M/s Vee Technologies Private Ltd.	10,562
8	M/s. eMudhra Ltd.	2,989

Figure-11 :

ELCOT IT Building, Jagirammapalayam, Salem

8.6.8. ELCOSEZ-Viswanathapuram, Hosur

ELCOT has established an IT SEZ at Viswanathapuram village, Hosur, in an extent of 174.47 acres of land at an investment of Rs.41.75 crore.

For improving the facilities in this ELCOSEZ further, additional infrastructure works are currently being carried out at a cost of Rs. 2.56 crore.

- In this ELCOSEZ, ELCOT has made allotment of 15 acres of land on lease basis to the following companies.

S.No	Company	Land Allotted (in acres)
1	M/s. Okaya Infocom Pvt. Ltd.	10
2	M/s. CRM IT Solutions Pvt. Ltd.	3
3	M/s. CRM Infotech India Pvt. Ltd.	2

Figure-12 :

Inauguration of ELCOT IT Building at ELCOSEZ-Viswanathapuram, Hosur by Hon'ble Chief Minister

Figure-13 :
ELCOT IT Building, Viswanathapuram, Hosur

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- Out of the 62,100 sq.ft. space in ELCOT IT Building, 45,661 sq.ft. has been allotted to the following companies.

S.No	Company	Space Allotted (in Sq.Ft.)
1	M/s. Msteel Detailing Services	3,461
2	M/s. Chandu Soft Technologies Pvt. Ltd.	6,961
3	M/s. Vision Plus Security Control Pvt. Ltd.	14,139
4	M/s. US Technology International Private Ltd.	21,100

Thanks to the initiatives taken by ELCOT and the Government of Tamil Nadu, investments, exports and employment have shown an upward trend.

8.6.9. Investments made by IT/ITeS companies in Tamil Nadu and ELCOSEZs

(Value in Rs. Crore)

	2014-15	2015-16	2016-17	2017-18	2018-19 Estimate
Tamil Nadu	23,071	29,998	36,704	39,353	33,627
ELCOSEZ	2,253	3,601	4,825	6,153	6,204
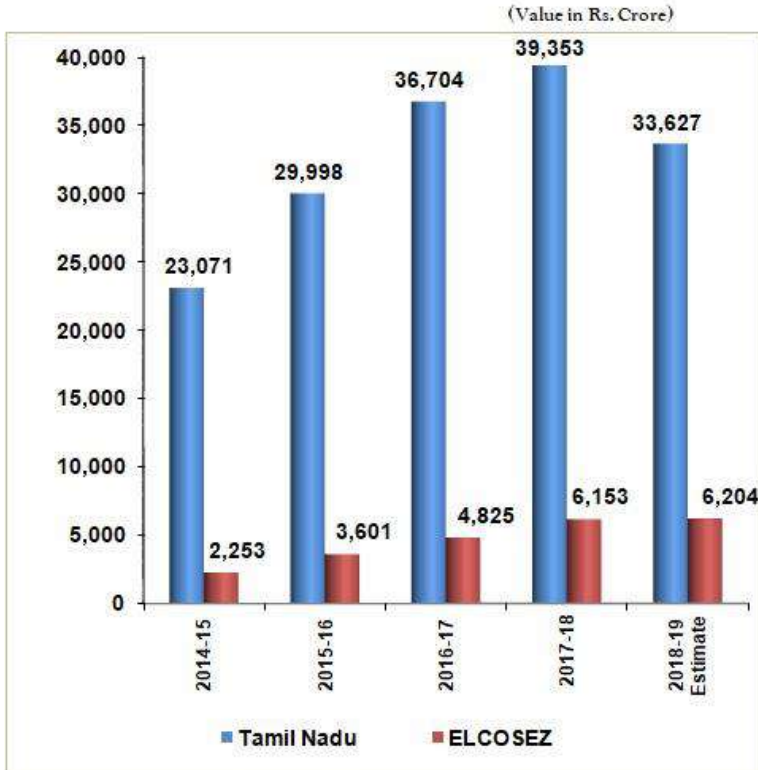
Source: STPI & Ministry of Commerce

Figure-14

8.6.10. Exports made by IT/ITeS companies in Tamil Nadu and ELCOSEZs

(Value in Rs. Crore)
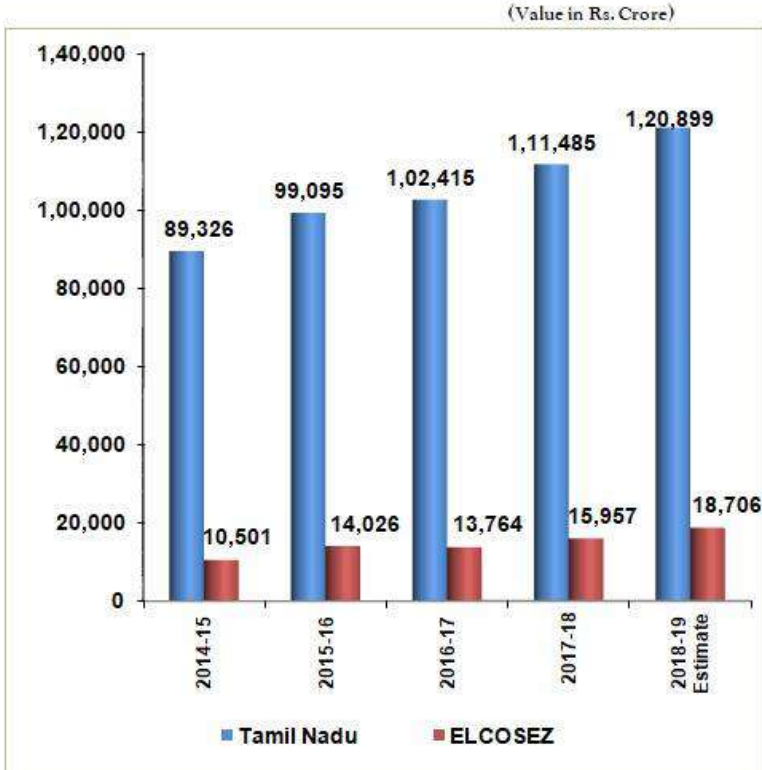
Source: STPI & Ministry of Commerce
Figure-15

8.6.11.Employment by IT/ITeS companies in Tamil Nadu and ELCOSEZs
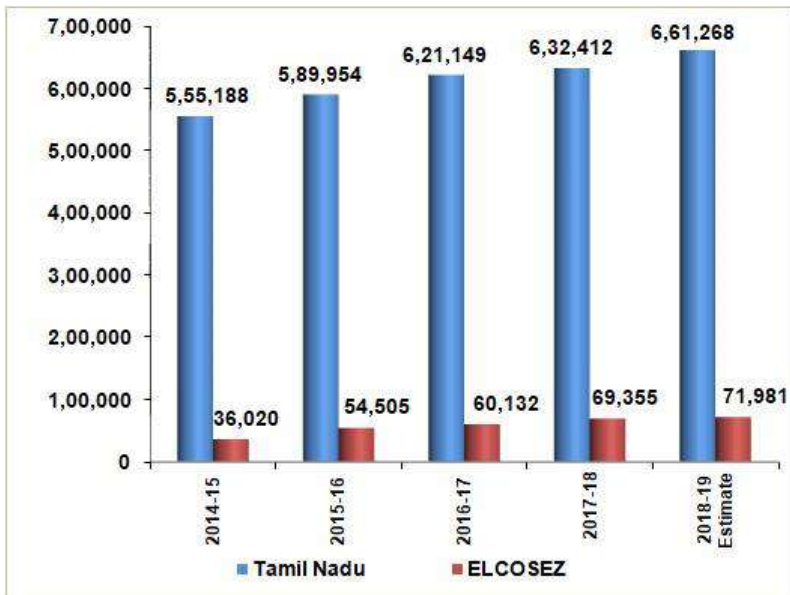
Source: STPI & Ministry of Commerce

Figure-16

8.7. Startup Warehouse, Chennai & Coimbatore

Pursuant to an announcement by the Hon'ble Chief Minister to give a fillip to the entrepreneurial capabilities of our youth, ELCOT

has established a Startup Warehouse at Tidel Park Limited, Chennai in a 90 seater IT space in an extent of 6,860 sq.ft. at a cost of Rs.3.53 crore.

Currently, 10 startups are in operation and 23 startups have incubated successfully from this Warehouse.

Figure-17 :
Startup Warehouse, Chennai

Similarly, a 50 seater startup has been established in Tidel Park Coimbatore Ltd. at an investment of Rs.2.07 crore.

NASSCOM serves as the Knowledge Partner for these startup warehouses.

8.8. Fintech Center Of Excellence (COE)

To make Tamil Nadu a leader in financial technologies, R&D, investments, employment opportunities, financial inclusion, a Centre of Excellence in FinTech has been set up at STPI, Chennai, in tune with the announcement made by the Hon'ble Minister of IT in 2018 at a cost of Rs.23.00 crore.

The CoE was launched by the Hon'ble Chief Minister on 27.02.2019. This CoE is funded by Government of India (Rs.5.75 crore), Government of Tamil Nadu (Rs.5.75 crore) and by private sector investment to the tune of Rs.11.50 crore.

8.9. Tech Forum at Madurai

As announced by the Hon'ble Minister of IT in the year 2018, a proposal for setting up a Tech Forum and Product Innovation Hub with an Incubation facility in emerging technologies like Blockchain, Artificial Intelligence, IoT, Machine Learning, Drones, AR / VR, Robotics, Data

Analytics etc., in Vadapalanji IT Park at Madurai, is under consideration of the Government.

8.10. IT Infrastructure

IT Infrastructure is the backbone for e-Governance within Government and for providing services to our Citizens. A combination of hardware, software, network, applications, database and hosting forms the core of this infrastructure. In an increasingly IT enabled scenario, all Government Departments are doing their in-house operations and citizen services through IT enabled processes.

To meet the above requirements, ELCOT has established and is maintaining the following IT Infrastructure services:-

8.10.1. Connectivity Services:

a. Tamil Nadu State Wide Area Network (TNSWAN)

TNSWAN commenced its operations on 01.12.2007 as a shared scheme between the Central and State Governments. Currently, the scheme is in operation with state funding.

TNSWAN Project Outlay

Description	Period	Project outlay (in crore)
Phase –I	From 01.12.2007 to 30.11.2012	Rs.140.25
Interim period	From 01.12.2012 to 08.09.2013	Rs.16.42
Phase-II	From 09.09.2013 to 08.09.2016	Rs.74.69
Interim period	From 09.09.2016 to 13.02.2019	Rs.52.73
Phase –II Extension	From 14.02.2019 to 13.02.2022	Rs.69.90

Initially, TNSWAN commenced its operations with 708 PoPs (Points of Presence). Currently there are 821 PoPs in the network. The Network Operation Centre (NOC) is located at ELCOT, Perungudi.

TNSWAN Phase-II extension

Government has accorded approval to extend TNSWAN Phase-II operations by 3 more

years, starting February 2019, with the existing hardware. A MoU has been entered into with M/s. BSNL towards provisioning of Bandwidth and a System Integrator (SI) has been selected for Operation and Maintenance (O&M).

TNSWAN provides Voice, Data and Video connectivity to all Government Departments for efficient workflow in Government and delivery of services to the public.

Figure -18 :

TNSWAN Network Operations Center

Figure-19 :

Network Room of TNSWAN

b. National Knowledge Network (NKN)

National Knowledge Network (NKN) is a State-of-the art, Multi Giga Bit Network aimed at connecting all universities, colleges and research establishments across the country. Both TNSWAN and TNSDC have been provided with 1 Gbps connectivity through this network,

enabling the user Departments to access applications hosted at the national level. All TNSWAN District PoPs are integrated with NKN to avail higher bandwidth up to 1 Gbps.

c. Redundant Connectivity at TNSWAN

Primary connectivity for TNSWAN Tier-II PoP at Taluk, BDO and RDO level is provided by BSNL. In order to ensure uninterrupted connectivity at these Tier-II PoPs, a secondary 2 Mbps MPLS-VPN (1:1) redundant connectivity has been implemented. Redundant links have been provided at 210 Tier-2 Vertical PoPs.

d. Other Connectivity Services

i. MPLS VPN (1:1) Connectivity

Multi Protocol Label Switch Virtual Private Network (MPLS VPN) (1:1) connectivity is being provided not only as redundant connectivity to TNSWAN connectivity at Vertical POPs but also for other departments that require committed

intranet bandwidth. ELCOT provides MPLS VPN connectivity services to around 100 Offices of Government Departments.

ii. Internet Leased Line (1:1) Connectivity

Internet Leased Line (1:1) connectivity is being provided to about 230 Government Offices that require internet connectivity with committed higher bandwidth requirement.

iii. VPNoBB Connectivity

Virtual Private Network (VPN) over Broadband is a cost effective alternative for providing Intranet access at lower bandwidth. ELCOT provides VPNoBB connectivity to around 600 Government offices.

8.10.2. Hosting and Allied Services

Under the National e-Governance Action Plan (NeGAP), Tamil Nadu State Data Centre (TNSDC) has been established as the core and

critical infrastructure for the roll out and delivery of secured e-Governance services of the State.

TNSDC enables State Government Departments and their agencies to host their applications, services and servers on a common, secured and controlled infrastructure aiming at ease of integration and efficient management. TNSDC provides operations and management control efficiently and aims to minimize overall cost of data management, IT management, deployment, power requirement and other costs.

In addition to TNSDC (Hosting Service), ELCOT is currently providing Disaster Recovery (DR), Cloud and IT Security services.

8.10.2.1. Hosting Services

i. TamilNadu State Data Centre 1 (TNSDC1)

TNSDC-1 has 40 racks in the first floor, 22 racks in the Ground floor (expansion) and 25 racks in the BSNL DC (extension). TNSDC-1 is the first ISO certified State Data Centre in the country (First Certification obtained on 21.02.2012). TNSDC-1 is operational from 01.08.2011 with overall budget outlay of Rs.138.00 crore. As of now, more than 160 Applications / Services are hosted in TNSDC-1 as co-location / co-hosting and cloud hosting model.

Figure -20

TNSDC-1

ii. Tamil Nadu State Data Centre-2 (TNSDC-2)

Since TNSDC-1 has reached 100% of its full capacity, the TNSDC-2 is being executed at a project outlay of Rs.74.70 crore. Construction of building has been completed and establishment of Data Centre with IT and Non IT equipments is in progress.

Figure – 21 :

TNSDC 2

8.10.2.2. Disaster Recovery Services

a. Tamil Nadu Disaster Recovery Centre (TNDRC) at ELCOSEZ, Tiruchirappalli

In order to have a Disaster Recovery Centre of its own in a different seismic zone for data and services, TNDRC has been established at ELCOSEZ, Tiruchirappalli at an estimated cost of Rs.59.85 crore to ensure business continuity

during normal times and during disasters for various critical e-Governance applications hosted at TNSDC. TNDRC can also address the hosting requirements of departments. TNDRC commenced its operations on 09.02.2018.

Figure – 22 : Inauguration of TNDRC, Tiruchirappalli

b. **Near Line Disaster Recovery Centre (NLDRC), Chennai**

The synchronous replication requirements of departments for Near Line Disaster Recovery have been setup by utilizing the resources at BSNL Data Centre Chennai at a cost of Rs.5.00 crore. NLDRC services commenced on 20.06.2016.

8.10.2.3. TN Cloud Services

Cloud computing enables ubiquitous access to shared pools of configurable system resources and higher-level services for rapidly provisioning of e-Governance applications with minimal management. TN Cloud has been established at TNSDC. Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) are being offered, including open source software stack. More than 50 Applications / Services are hosted in TN Cloud and it is in operation from 01.03.2016 at an outlay of Rs.11.39 crore.

Figure-23 :

Cloud servers

8.10.3. e-Security Services

a. Security Architecture for TNSDC

A high level security architecture framework has been implemented at TNSDC to ensure data protection of all the Government Applications / Services. TNSDC has been secured with Security Information and Event Management (SIEM) tool. Onsite Vulnerability Assessment & Penetration Testing (VAPT) also has been provisioned in TNSDC.

Security Architecture for TNSDC
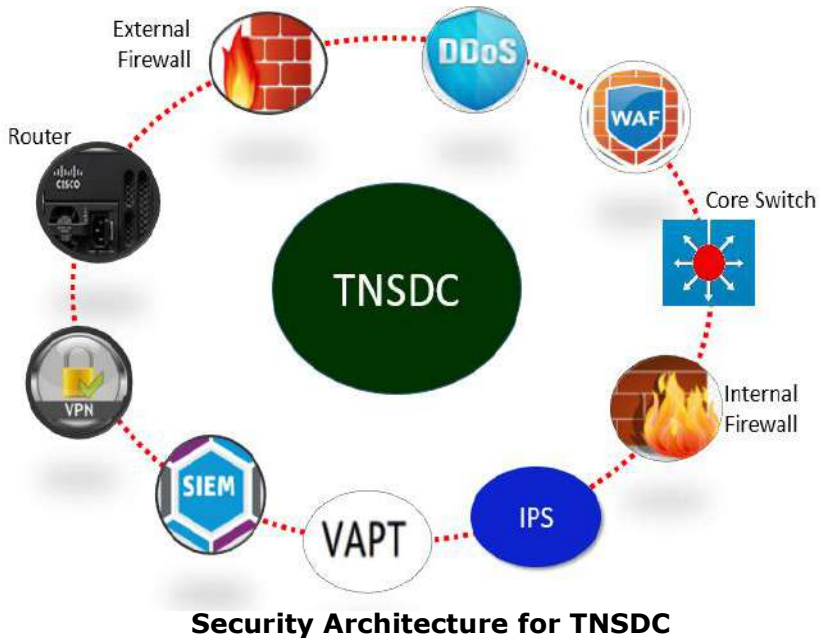
Figure -24

b. Cyber Security Architecture for Tamil Nadu (CSA-TN)

Pursuant to the announcement made by the Hon'ble Chief Minister of Tamil Nadu under Rule 110 of the Tamil Nadu Legislative Assembly Rules on 01.06.2018, CSA–TN is being established by ELCOT in collaboration with Centre for Development of Advanced Computing

(C-DAC) at a cost of Rs.21.39 crore. Cyber security is essential for maintaining all critical IT infrastructure of Departments, as well as e-Governance services of the State.

Components of CSA-TN: (i) CCMP-TN, (ii)CERT-TN (iii) SOC-TN and (iv) SAF-TN.
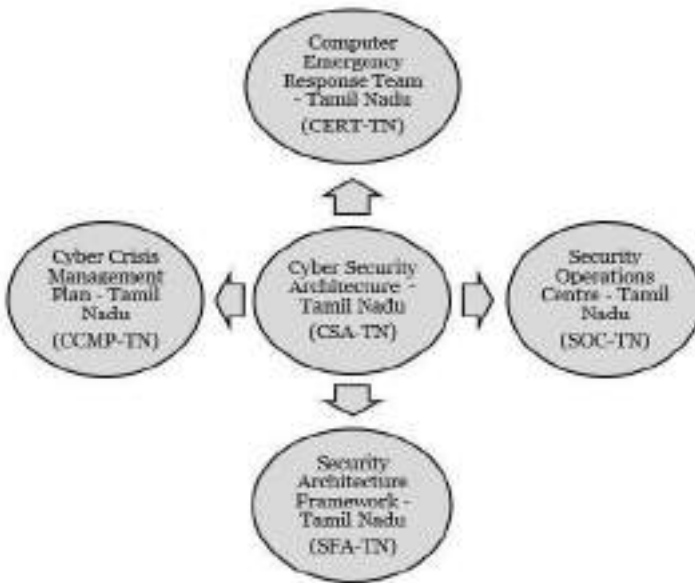
Figure -25

Figure –26 :

Hon'ble Chief Minister handed over Laptops to students for the academic year 2018-19

8.11. Scheme for Distribution of Laptop Computers to Students

The dream of our students studying in Government and Government-aided Schools and colleges to own a laptop is fulfilled *by* Government of Tamil Nadu's scheme of distribution of laptop computers free of cost. This Scheme was inaugurated by the then Hon'ble Chief Minister of Tamil Nadu on 15.09.2011.

Number of Laptop Computers supplied:-

Sl No.	Academic year	No. of Laptops procured	No. of Laptops supplied
1	2011-12	8,98,866	8,98,866
2	2012-13	7,56,000	7,56,000
3	2013-14	5,65,000	5,65,000
4	2014-15	4,96,999	4,96,999
5	2015-16	5,19,029	5,19,029
6	2016-17	5,58,218	5,58,218
7	2017-18 (Part)	59,460	59,460

38,53,572 Nos. of Laptops have been supplied till 2017-18. For the academic year 2017-2018 (part) and 2018-2019, the Procurement of 15,66,022 numbers of Laptops was finalized through ICB tender and supplies commenced from March 2019 onwards and are expected to be completed by October 2019. 11,13,204 numbers of laptop computers were procured and supplied till 30.06.2019.

8.12. e-Governance

8.12.1. e-Governance for other Government Departments / Agencies

ELCOT has taken significant steps towards successful implementation of e-Governance since 1996. ELCOT has been developing websites and application software development for Government Departments.

Sl. No.	Department Name	Project	Cost (in Rs.)
1	Agriculture Department	Seed Production Enforcement and Certification Systems (SPECS) Project	11,40,000
2	Cooperative and Local Fund Audit Department	Audit Information Management System Project	46,10,000
3	Directorate of Employment & Training	Training Wing – Online Admission System	35,38,000
4	Evaluation and Applied Research Department	Survey Application Portal	15,22,000

5	Tamil Nadu Electrical Inspectorate	Online Lift License Management and Online Filing of Returns of Electricity Tax	13,87,000
6	Directorate of Horticulture	Online Farm Management System	7,47,000
7	Directorate of Industrial Safety and Health (DISH)	Web Portal	27,88,075
8	Directorate of Town and Country Planning	Electronic Solution for automated building plan security and approval system	49,20,016
9	Archaeology Department	Web Based Virtual Tour integrated with GIS	24,44,024

8.12.2. All India Service Officers Portal

ELCOT developed a portal vide url: https://www.elcot.in/aislaptop/ais-cart to enable the officers to submit their choice online for procuring laptop/ tablet / i-Pad and for making payments over and above the cost sanctioned by Government. SMS, e-mail and payment gateway have been integrated with this portal.

8.12.3. Websites created for the Government Departments

1. Conservation Authority of Pallikaranai Marshland

2. Department of Forests

3. Tamil Nadu Horticulture Department

4. Finance (BC) Department

5. Tamil Nadu Infrastructure Development Board

6. Adi-Dravidar Welfare Board

7. Archaeology Department

8. Government Museum

9. Information Technology Department

10. TN Folk Artists Welfare Board

11. Arts and Culture

8.12.4. Open Government Data of Tamil Nadu

Open Government Data (OGD) is a platform for supporting Open Data initiative of Government of Tamil Nadu. Government Departments, Organizations and Public Sector can publish their datasets, documents, services, tools and applications, for public use. In this regard, an announcement was made by the Hon'ble Minister for Information Technology during the year 2017-18.

The State instance for OGD, Tamil Nadu State has been created and is now operational in the address https://tn.data.gov.in/. Currently,

about 12,200 different datasets have been published into the TN OGD portal pertaining to 43 Government Departments/Agencies. Registrations for 81 Chief Data Officers (CDOs) have been done. Two mobile apps (ELCOT Aadhaar PEC Centers list in Tamil Nadu and TNMSC Medical Scan Centers list in Tamil Nadu have been developed.

Cost of Project: Rs.2.11 crore

8.12.5.Permanent Enrolment Centres (PECs)

ELCOT is one of the agencies empanelled by the Unique Identification Authority of India (UIDAI) to execute Aadhaar Enrolment activities. ELCOT currently has 214 PECs as follows:-

- ➢ District Collectorates – 32
- ➢ Municipal Corporation Headquarters – 11
- ➢ Municipal Zonal offices – 45
- ➢ Municipalities – 124
- ➢ Revenue Divisional Offices – 2

The centres are operational from 03.10.2016 and are presently providing the following services to the citizens:-

1. Aadhaar Enrolment
2. Mandatory Biometric Update for children attaining the age of 5 years and 15 years
3. Demographic Update (Any Type / Any Channel)
4. Aadhaar search using eKYC / Find Aadhaar / any other tool and B/W printout on A4 sheet
5. Lost Enrolment Identity (EID)

About 6000 to 8000 citizens are benefited from these centres every day.

The Transaction count as on 30.06.2019 is as follows:-

S.No.	Description	Transaction Count (In Nos.)
1	Aadhaar Enrolment	16,53,419
2	Aadhaar Demographic Updation	25,65,169
	TOTAL	**42,18,588**
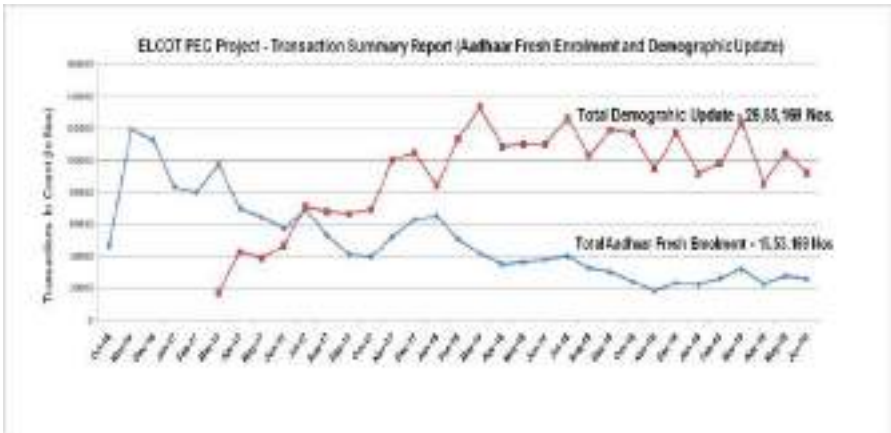
Figure - 27

Transaction Summary Report

S. No.	Year	Enrolment Count (in Nos.)	Update Count (in Nos.)
1	Oct 2016 - Mar 2017	5,40,741	17,764
2	Apr 2017 - Mar 2018	6,71,052	9,43,269
3	Apr 2018 - Mar 2019	3,63,500	13,21,729
4	Apr 2019 – June 2019	78,126	2,82,407
	Total	**16,53,419**	**25,65,169**

ELCOT PEC Project - Transaction Summary Report (Aadhaar Fresh Enrolment and Demographic Update)
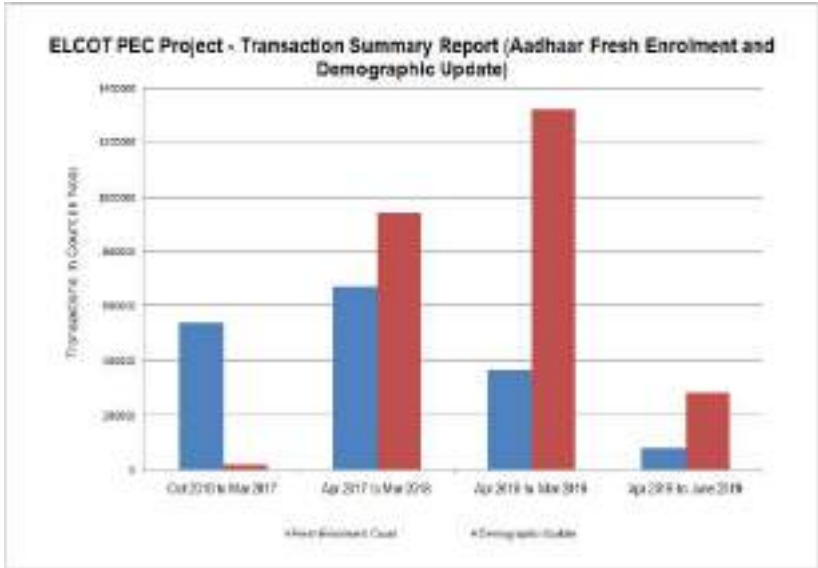
Figure -28

PECs to be established by ELCOT in 385 Blocks under Samagra Shiksha

Samagra Shiksha has requested ELCOT to submit proposals to run Aadhaar Enrolment Centres in 385 Blocks (two counters per block in 120 Blocks and one counter per block in 265 Blocks) on behalf of SamagraShiksha for the benefit of school students. ELCOT will be establishing the centres soon.

8.12.6. e-Smart Classroom

Smart Classrooms are technology enhanced classrooms that foster new teaching and learning experiences for teachers and students.

The Smart Classroom assimilates
- ➢ Attractive and effective Presentation
- ➢ Digital 2D/3D Animated Content
- ➢ International Learning Environment

e-Smart Class Room (e-SCR) project involves supply, installation and commissioning of Interactive White Board, Hardware, Software, Multimedia Content, Training the Teachers along with maintenance support for various High schools / Higher Secondary / Residential Schools and provision for upgradation / modification of multimedia content as per the syllabus prescribed by the Government from time to time. ELCOT has so far implemented e-SCR project in 256 schools in Tamil Nadu for standards VI to XII.

Figure -29 :
AdiDravidar Welfare Department
Smart Class Room at Aathur, Salem District

8.13. Amma Call Centre (ACC)

Amma Call Centre with toll-free number 1100(24x7) that was launched on 19.01.2016 initially functioned under the administrative control of the Public Department. From 15.02.2018 onwards, it has started functioning under the administrative control of the Information Technology Department. ACC enables the public to submit grievances at any time and anywhere through to mobile phone.

These calls are attended by agents employed in the Amma Call Centre. Each grievance is registered and numbered. The receipt of the grievance is acknowledged to the petitioner by SMS and the same is forwarded with a gist of the grievance by SMS to the concerned Grievance Redressal Officer (GRO) for redressal. On receipt of the SMS, the GRO contacts the petitioner through telephone to get additional details of the grievance. The details of grievances and the action taken are uploaded by the GRO's in the Amma Call Centre website www.ammacallcentre.tn.gov.in. The disposal of the grievance is also intimated to the petitioner by SMS. From 01.01.2018 to 31.12.2018 1,07,690 grievances were received and 96.65% grievances have been disposed of. In 2019, 32,713 grievances have been received up to 30.04.2019, 64.45% of the grievances have been disposed of so far.

8.14. Capacity Building

ELCOT has been playing an important role in supporting the training needs of Government Departments since June 2007. Adequate infrastructure facilities have been created at ELCOT, Perungudi, Chennai with 75 seats and minimum of 15 seats at district level except Madurai and Tiruchirappalli, which have 30 seats.

The Training Programs addresses the internal stakeholders covering middle level officers who are associated with e-Governance projects. The training content primarily focused on developing requisite knowledge and skills, and to bring better understanding of the projects being rolled out.

Comprehensive Training on various Operating Systems such as Windows, Linux (Suse Linux, BOSS etc.) and Application Software Training are conducted through the "Train the Trainer" programme. On successful completion of the training, certificates are issued to the participants.

Training Infrastructure facilities are also provided to the departments for specific Application Software training. So far, **1,19,247** participants have benefited from various Government departments across the State.

Figure -30 :
Training the staff of Anna Institute of
Management at ELCOT Training Centre,
Tiruchirappalli District

8.15. Networks

a. Video Conferencing

Inauguration of 197 welfare schemes from May 2016 to June 2019 through Video Conferencing by the Hon'ble Chief Minister, Provision of Communication equipments for the

visit of VVIPs to State of Tamil Nadu and supply of VC system to various Government Departments/Agencies.

b. CCTV Surveillance system

Provision of CCTV Surveillance system with accessories for the examinations conducted by various Government Departments/Agencies, Supply and Maintenance of CCTV system at Namakkal Kavignar Maaligai and Main Building, Secretariat with monitoring facility on 24x7 basis and for Elections Department.

c. e-Notice

Procurement of Studio based Video Conferencing system and supply of e-notice board for Court Complexes in Tamil Nadu

d. e-Clocks and Network Maintenance

Supply and Maintenance of Digital synchronized clocks at Tamil Nadu Legislative

Assembly, Maintenance of Secretariat Network (SECNET) on 24x7 basis, Upgradation and provision of network infrastructure (SECLAN) at Secretariat.

9. Proposals under consideration

9.1. Electronics Hardware Manufacturing Policy

ELCOT has drafted an Electronics Hardware Manufacturing Policy which is under consideration of the Government.

9.2. Creating Land Bank

Tamil Nadu has several hardware/ software SEZs, wherein ELCOT has established 8 SEZs in a total area of about 1321.61 acres for IT/ITeS sector which has attracted major players like CTS, Ford, WIPRO, HCL, Tech Mahindra, Honeywell, Syntel etc., to Tamil Nadu. ELCOT is proposing to create a land bank across Tamil Nadu to allocate land to hardware industries as

well to promote Electronics Hardware Manufacturing in the State.

9.3. FinTech Policy

ELCOT is drafting a policy on Fintech for making Tamil Nadu a leader in Financial Technology.

10. Financial Performance

ELCOT, with its 4 factory units, was originally functioning with optimum resources and with a turn over barely sufficient to manage its expenses. Since inception in the year 1977 till the year 2002-03, ELCOT had accumulated Rs.1 crore only as Reserves and Surplus against the paid up Share Capital of Rs. 25.93 crore.

Over the years, ELCOT has accumulated Reserves and Surplus which stood at Rs.266.49 crore in the year 2017-18.

Thus, ELCOT is now financially in a comfortable position and with the allotment of

the balance land in the IT SEZs and exploration of new avenues of business which are in pipe line, the finances of ELCOT are expected to consistently improve in the coming years.

The Financial Performance of ELCOT from the year 2013-14 to 2017-18 and 2018-19 (unaudited) is tabulated below:

(Rs. in Lakhs)

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19 (un-audited)
Income						
Sales	853.17	891.51	930.82	863.16	985.48	772.38
Services	907.22	1,432.75	842.52	549.71	1,332.19	1,009.99
Others	3,400.54	4,155.64	10,157.63	5,858.25	6,525.93	10,798.92
Total Income	**5,160.93**	**6,479.90**	**11,930.97**	**7,271.12**	**8,843.60**	**12,581.29**
Expen-diture						
Administration	1,508.90	1,686.75	1,712.48	1,674.59	2,078.32	2,524.02
Depreciation	326.68	409.92	552.27	553.30	567.31	542.58

Finance Cost (Interest on Govt. Advances)	1,111.16	1,134.52	1,034.55	953.44	756.36	1,230.07
Others	550.28	625.65	1,107.69	1,114.44	1,956.68	1,204.00
Total Expenditure	**3,497.02**	**3,856.84**	**4,406.99**	**4,295.77**	**5,358.67**	**5,500.67**
Net Profit	**1,663.91**	**2,623.06**	**7,523.98**	**2,975.35**	**3,484.93**	**7,080.62**
Income Tax	**468.79**	**701.72**	**1,616.49**	**923.66**	**1,082.99**	***1,292.00**
Amount paid to Govt.						
Interest/Nomina-tion Charges	1,109.29	1,132.65	1,032.69	951.58	754.50	****-**
Dividend	777.92	777.92	1,772.24	777.92	777.92	****-**
Total Amount paid to Govt.	**1,887.21**	**1,910.57**	**2,804.93**	**1,729.50**	**1,532.42**	**-**

Note:

*Income Tax for the year 2018-19 denotes advance tax paid.

** Interest on Government advances and Dividend for the year 2018-19 will be paid after Annual General Meeting.

CHAPTER-3

COMMISSIONERATE OF e-GOVERNANCE AND

TAMIL NADU e-GOVERNANCE AGENCY

1. Introduction

The Commissionerate of e-Governance was created in 2006 to lead all e-Governance initiatives of Government of Tamil Nadu. Tamil Nadu e-Governance Agency (TNeGA) was created as an autonomous Society registered under the Tamil Nadu Societies Registration Act, 1975 to align and implement the National e-Governance Plan.

2. Vision

To fulfil the vision of Good Governance using the tools that information technology provides, such that working within Government becomes transparent and efficient, with

concomitant transparency and efficiency in delivery of services to our Citizens.

3. Mission

The mission of TNeGA is to improve the quality of life of our Citizens through efficient delivery of Government Services using the tools of Information Technology, and to create cost effective, scalable solutions for Governance, making full use of Emerging Technologies like Blockchain, AI/ML, IoT, Drones, Data Analytics, AR/VR, etc.

4. Objectives

i) To be the Chief Technology and Innovation Organization for the Government of Tamil Nadu.

ii) To transform Governance in every Government institution of Tamil Nadu, such that these institutions become paperless, hassle free, transparent and free of physical touch points.

iii) Transformation of the business of Government to make the experience quick and pleasant for all stakeholders.

iv) Act as a 'force multiplier' by building the soft infrastructure for smart governance, improving competitiveness of the State economy and making the State future ready.

v) Handholding and supporting Government Departments and Agencies in meeting their Information Technology needs.

vi) Identifying the common service needs of various Government Departments and providing a cost effective and efficient solution.

vii) Proactively engaging with Government Departments, NGOs and International Organizations and institutions engaged in programmes and objectives similar to

TNeGA, in developing a shared vision of Governance.

viii) Creating a vibrant ecosystem of academic institutions, research organizations, startups, funding agencies and eminent individuals, to innovate, design and implement solutions for pressing governance issues.

ix) Capacity Building of all Government employees at all levels in Information Technology to enable efficiency in governance.

x) Organize workshops, seminars, conferences on e-Governance.

xi) Publish research papers, journals, workshop proceedings, newsletters etc., at National and International forums.

5. Institutional Framework

5.1. Commissionerate of e-Governance


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┌─────────────────────────────────┐
│  Commissioner of e-Governance   │
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                │
┌─────────────────────────────────┐
│  Joint Director,  e-Governance  │
└─────────────────────────────────┘
                │
       ┌────────┴────────┐
┌──────────────┐   ┌──────────────┐
│ Deputy       │   │ Joint        │
│ Director     │   │ Director     │
│ (Admin)      │   │ (Technical)  │
└──────────────┘   └──────────────┘
       │                  │
┌──────────────┐   ┌──────────────────────┐
│ Administration│   │ Sr. System Analysts/ │
│ / Accounts    │   │ Sr. system Engineers │
└──────────────┘   └──────────────────────┘
                          │
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                   │ System Analysts/     │
                   │ System Engineers     │
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                   │ Asst. System Analysts/│
                   │ Asst . System Engineers│
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5.2. Tamil Nadu e-Governance Agency (TNeGA)

5.3. Centre of Excellence in Emerging Technologies (CEET)

The Hon'ble Chief Minister in his reply to the Governor's Address in January 2019 announced the creation of a Centre of Excellence in Emerging Technologies in TNeGA. Accordingly,

the CEET has been established, with the vision to bridge the knowledge gap between development and application of emerging technologies in Government Departments.

CEET is envisaged to act as a catalyst for diffusion of innovation into the targeted Departments. It would provide a platform for collaborative partnerships with various stakeholders. It would facilitate integration of industry, Government, academic and non-Government organizations to bridge the gap between the product and the need. CEET proposes to:

➢ Establish and foster partnership with Government Departments, agencies, corporate entities, industry bodies and academic institutions working in emerging technologies.

- Define and promote best practices and standards followed across the globe in emerging technologies.
- Engage in capacity building, training and orientation for officers at various levels of the Government Departments to facilitate achievement of their goals.
- Reach out to other organizations offering similar, complementary or supplementary facilities.
- Organize development programmes, training courses, conferences, seminars, guest lectures and other related events.
- Organize workshop in the areas of emerging technologies, invite innovative ideas and nurture Innovation talents.
- Research output in terms of working papers, industry papers, referred journal articles, books, conference presentations, etc.

- Perform R&D projects and undertake specific prototyping or development tasks which could include piloting new product features and proactively building reusable components
- Evolve reuse strategies and centralize the shared asset creation and consumption process for the Departments.

The following projects have been undertaken in CoE for Emerging Technologies:-

- Detecting internal bleeding from CT scans
- Identification of pest, disease and nutrient deficiency of crop using AI.
- Computer vision based attendance system
- Enablement using Blockchain.
- Blockchain for tamper proof preservation of Registration documents.

- SDG monitoring dashboard for State Planning Commission (SPC).
- Creating a State Family Database (SFDB)
- IoT based monitoring of drinking water supply in rural areas.
- Creating a Chatbot for facilitating delivery of Government services to citizens.
- Real time monitoring solution for Mudumalai Tiger reserve.

Figure-31

Inaguration of New Office Building for TNeGA at P.T.LEE Chengalvarayan Building, Chennai

Figure-32
Inaguration of New Office Building for TNeGA at P.T.LEE Chengalvarayan Building, Chennai

5.4. State e-Mission Team (SeMT)

State e-Mission Team (SeMT) is one of the capacity building initiatives under the National e-Governance Plan (NeGP) of the Ministry of Electronics & Information Technology (MeitY), Government of India, to provide e-Governance expertise to State Governments. SeMT is funded by MeitY and is functioning under TNeGA. The SeMT is a core group of IT Consultants specialized in the areas of Programme Management, Technology Management, Financial Management and Change Management.

5.5. District e-Governance Society (DeGS)

District e-Governance Societies have been constituted in all Districts. This Society is headed by the District Collector, except in Chennai, where the Commissioner, Greater Chennai Corporation acts as the Head. It provides overall guidance to e-Governance projects at the district level.

6. Information Technology (IT) Cadre

It has become essential to guide, standardize and implement e-Governance projects in an integrated and secured IT environment. Accordingly, an IT Cadre of Assistant System Analyst / Assistant System Engineer, System Analyst / System Engineer, Senior System Analyst/Senior System Engineer has been formed with 98 posts. In order to cater to the IT needs of all Government Departments, posts of Assistant System Analyst / Assistant System Engineer are being created by the respective departments.

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

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 (https://tnega.tn.gov.in/pages/view/Electronic-Services-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.

8. e-Governance and other initiatives within TNeGA

8.1. e-Site

The following websites have been created with the purpose of enabling Citizens to transact with Government:-

i) https://tn.gov.in

ii) https://tnega.tn.gov.in

iii) https://tnedistrict.tn.gov.in

iv) https://www.tnesevai.tn.gov.in

v) https://tngis.tn.gov.in

8.2. e-Infra

TNeGA has well established internet connectivity and necessary hardware to ensure seamless online services.

8.3. e-Procurement

All procurements of goods and services in TNeGA are done in a transparent manner using the online tender portal (https://tntenders.gov.in) of the Government of Tamil Nadu.

8.4. e-Attendance

AI based facial recognition technology has been deployed for marking employee attendance.

8.5. e-Repository

e-Repository software will be developed for the use of Government departments as a centralized software repository tool.

8.6. e-Monitoring

e-Monitoring is a software application to review/monitor the status of various schemes implemented by the Government.

9. Memorandums of Understanding

As a part of continuing technological innovation programme, the TNeGA has entered into agreements with various eminent academic and non-academic institutions. The following MoUs have been signed.

i) MoU between TNeGA and IIM, Tiruchirappalli

ii) MoU between TNeGA and Virginia Tech University

iii) MoU between TNeGA and Pontaq-UK India Innovation Fund

The IIM, Tiruchirapalli will support TNeGA on impact assessment of various departments' interventions using advanced data analytics.

https://tnega.tn.gov.in/pages/view/MOU-IIMT

Virginia Tech University of USA will support TNeGA in research and solution finding mainly in the areas of agriculture and drones.

https://tnega.tn.gov.in/pages/view/MOU-VT

Pontaq – UK India Innovation Fund will assist promising start-ups working on the problems identified by TNeGA, and in rolling out solutions for other Government Departments.

https://tnega.tn.gov.in/pages/view/MOU-Pontaq

10. e-Media (Namadhu Arasu)

Hon'ble Minister for information Technology announced Namadhu Arasu Scheme during the Assembly session 2017-18. Namadhu Arasu aims to promote active online dissemination of information to Citizens regarding Governance. The citizen-centric platform empowers people to connect with the Government & contribute towards good governance. The Government has accorded

Administrative sanction of Rs.91.80 lakh and financial sanction of Rs. 47.95 lakh as 1st year installment for implementation of the scheme.

11. Weekly Seminars at CEET

CEET conducts seminars every Friday, on emerging technologies and its application for governance. The following seminars have been conducted so far:-

1) Facial recognition using deep learning
2) A Gentle Introduction to Hidden Markov Models and its Applicability to Alleviate Farmer Distress
3) Top 10 Algorithms for Data Mining
4) Distributed Ledgers and Consensus Algorithms
5) A Graph Theoretic Algorithm for Scheduling Problems
6) Multivariate Analysis and Applications
7) Automatic License Plate Recognition

8) A near-real time planning Algorithm for Dispatching Trains in Railroad Networks

9) Basic Image Processing Techniques

10) Automatic manipulation of XML representation using Java

11) Behavioural Economics from nudge to sludge

12) Implementing Large IT projects

12. Activities

12. 1. Arasu e-Sevai Centres

Government is working with the vision to deliver all services online to the Citizens even in the remotest corner of the state through Arasu e-Sevai Centres. Arasu e-Sevai Centres are functioning with the objective of providing unified access to e-Services of different Government Departments on a common platform across the State.

The Arasu e-Sevai Centres are run by agencies like Primary Agricultural Co-operative

Societies (PACCS), Village Poverty Reduction Committee (VPRC), Tamil Nadu Arasu Cable TV Corporation Ltd. (TACTV), TACTV Franchise, International Fund for Agriculture Development (IFAD) and Village Level Entrepreneurs (VLEs). Currently there are 12,649 Centres with 13,088 counters functioning across the State.

S. No.	Name of the Agency	Centres	Counters
1	**TACTV**	661	1002
2	**PACCS**	4369	4372
3	**VPRC**	4269	4364
4	**IFAD**	8	8
5	**VLE**	2304	2304
6	**TACTV-FRANCHISE**	1001	1001
7.	**Fisheries Department**	37	37
	Grand Total	**12,649**	**13,088**

List of services offered through Arasu e-Sevai Centres

Department	Services Name
Revenue and Disaster Management Department (No. of services - 34)	Income Certificate
	Nativity Certificate
	Residence Certificate
	Community Certificate
	First Graduate Certificate
	Deserted Woman Certificate
	Family Migration Certificate
	Unemployment Certificate
	Widow Certificate
	Agricultural Income Certificate
	Certificate for Loss of educational records due to disasters
	No Male Child Certificate
	Unmarried Certificate

	Inter-caste Marriage Certificate
	Legal Heir Certificate
	Solvency Certificate
	Licence under Pawn Broker's Act
	Money Lender's Licence
	Other Backward Community (OBC) Certificate
	Small / Marginal Farmer Certificate
	e-Adangal
	Indira Gandhi National Old Age Pension Scheme
	Indira Gandhi National Widow Pension Scheme
	Indira Gandhi National Disability Pension Scheme
	Differently abled Pension Scheme
	Destitute Deserted Wives Pension Scheme
	Unmarried Women Pension Scheme
	Destitute Widow Pension Scheme

	Tamil Nilam – Full Field Patta Transfer
	Tamil Nilam – Joint Patta Transfer
	Tamil Nilam – Subdivision
	Grievance Day Petition
	Tamil Nilam - Extract of A-Register
	Tamil Nilam – Extract of Chitta
Social Welfare and Nutritious Meal Programme Department (No. of services -7)	Annai Terasa Ammaiyar Ninaivu Orphan Girl Marriage Assistance Scheme
	Chief Minister's Girl Child Protection Scheme- I
	Chief Minister's Girl Child Protection Scheme-II
	Dharmambal Ammaiyar Ninaivu Widow Re-marriage Assistance Scheme
	Dr.Muthulakshmi Reddy Ninaivu Intercaste Marriage Assistance Scheme
	EVR Maniammaiyar Ninaivu Widow Daughter Marriage Assistance Scheme

	Moovalur Ramamirtham Ammaiyar Ninaivu Marriage Assistance Scheme
Civil Supplies Department (No. of services - 6)	Apply for New Card
	Alterations to the Card - Addition of New Family Members, Change of Address / Card Type / Cylinder count / Family Head Member, Modify / Remove Family Member details, Beneficiary change of Photo
	Card Surrender / Cancellation
	New User Registration
	Family Card Blocking/Unblocking
	Printing of Smart card
Police Department (No. of services - 8)	CSR Status
	FIR Status
	Online Complaint Registration
	Status Viewing
	Vehicle Search
	View FIR

	Download Accident Case Document
	Lost Document Report
Adi-Dravidar& Tribal Welfare Department (No. of services - 4)	GoI Post Matric Scholarship for SC Students
	GoI Post Matric Scholarship for ST Students
	State Special Scholarship for Post Matric Students
	Higher Education Special Scholarship Scheme
Backward Classes, Most Backward Classes & Minorities Welfare Department (No. of services - 4)	Issuance of Post Matric Scholarship for BC Students
	Educational Assistance to BC students in Professional Courses
	Educational Assistance to BC Graduates
	Educational Assistance to BC Polytechnic Students
Tamil Nadu Waqf Board (No. of service - 1)	Ulema Pension Schme
Health Department (No. of service - 1)	Pre-Registration of Pregnancies (PICME)

Directorate of Boilers (No. of services - 4)	Registration of License under Boilers Act
	Renewal of Licence under Boilers Act
	Application for Approval of Manufacture and renewal thereof
	Application for approval of Erector and renewal thereof
Commissionerate of Municipal Administration (No. of services-5)	Collection of Non Tax
	Collection of Professional Tax
	Collection of Property tax
	Collection of Underground Drainage Charge
	Collection of Water Charges
CMWSSB (No. of service - 1)	Water and Sewerage Tax
Greater Chennai Corporation (No. of services - 6)	Printing of Birth Certificate
	Printing of Death Certificate

	Renewal of Trade License
	Collection of Company Tax
	Collection of Professional Tax
	Collection of Property Tax
Directorate of Fire & Rescue Services (No. of services-5)	NOC for MSB compliance
	NOC for MSB Planning Permission
	NOC for Non-MSB Planning Permission
	MSB Fire Licence Registration and Renewal
	Non-MSB Fire Licence Registration and Renewal
TANGEDCO (No. of services-3)	Electricity Bill Payment
	Registration of New LT Connection
	Payment for New LT Connection

Anna University (No. of service - 1)	TN Engineering Admission B.E/ B.Tech Online Registration
Directorate of Employment & Training (No. of services - 4)	Printing of Registration ID
	Application for Renewal
	Application for Profile Updation
	Application for Registration
Directorate of Drug Control Administration **(No. of services - 5)**	Application for License to grant or renewal allopathic drugs
	Application for License to grant or renewal homeopathic medicines
	Application for License to grant or renewal restricted License (allopathic drugs)
	Application for License to grant or renewal specified in Schedule X drugs
	Application to obtain duplicate License

TNeGA (No. of service - 1)	PDS AADHAAR Integration
TNEI (No. of services - 2)	Issuance of Drawing approval
	Issuance of Safety Certificate
Greater Chennai Traffic Police(No. of service - 1)	Collection of Greater Chennai Traffic Police Challan Payment
Fisheries Department(No. of services - 2)	Relief Assistance to Marine Fishermen families during Fishing Ban period
	Special Allowance to marine fishermen families during fishing lean period
Welfare of Differently Abled Persons (No. of services - 3)	Application for loan assistance Scheme
	Marriage Assistance Scheme
	Maintenance Allowance for Differently abled person
Directorate of Handlooms (No. of services - 6)	Awarding scholarships under Dr. MGR Handloom Weavers Welfare Trust

	Tamil Nadu Co-operative Handloom Weavers Savings and Security Scheme
	Tamil Nadu Co-operative Handloom Weavers Old age Pension Scheme
	Tamil Nadu Co-operative Handloom Weavers Family Pension Scheme
	Mahatma Gandhi BunkarBimaYojana
	ShikshaSahayogYojan Scheme under Mahatma Gandhi BunkarBimaYojana
Housing and Urban Development Department (No. of service - 1)	Tamil Nadu Regulations of Rights and Responsibilities of Landlords and Tenants Act
TOTAL	115

Transaction count of Top 10 services offered through Arasu e-SevaiCentres

Transaction Count of Top 10 Services Offered Through Arasu eSevai Centers (2018-19)
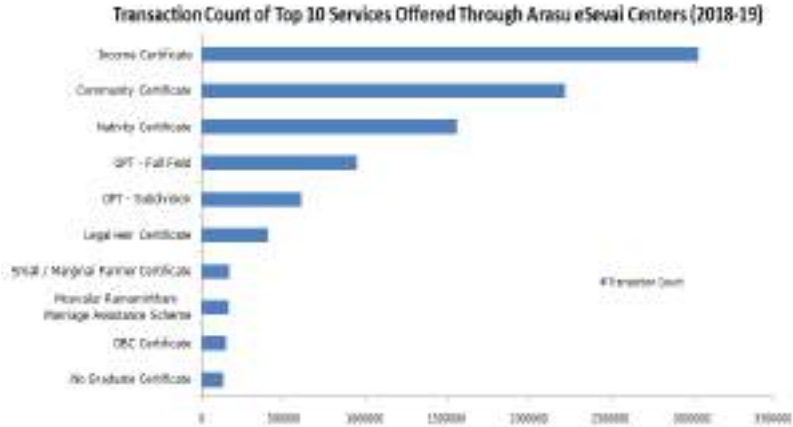
Figure-33

Monthwise Transaction count of services offered through Arasu e-Sevai Centres

MonthWise Transaction Count of Services Offered Through Arasu eSevai Centers (2018-19)

Figure-34

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Arasu e-Sevai Centres Revenue Income (April 2018 to March 2019)
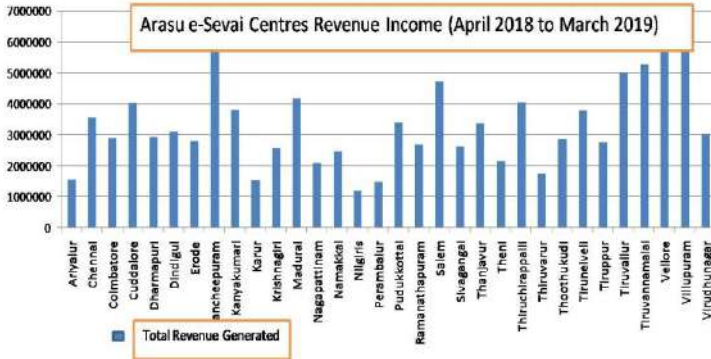
Figure-35

Financial Year wise Transaction count

Financial Year	Transactions received through Arasue e-Sevai centers (in Lakh)	Transactions received through Open Citizen Portal (in Lakh)	Total Online Transactions (in Lakh)
2011-12	0.83	0	0.83
2012-13	1.98	0	1.98
2013-14	9.85	0	9.85
2014-15	24.75	0	24.75
2015-16	110.1	0	110.1
2016-17	116.33	0	116.33
2017-18	117.34	0	117.34
2018-19	100.75	3.24	103.99
Total	**481.93**	**3.24**	**485.17**

12.2. Permanent Enrolment Centres (PECs)

The Directorate of e-Governance (DeG)/ Tamil Nadu e-Governance Agency (TNeGA) was appointed as Registrar for Aadhaar enrolment. Tamil Nadu Arasu Cable TV Corporation Ltd. (TACTV) and Electronics Corporation of Tamil Nadu (ELCOT) were appointed as Enrolment Agencies under TNeGA by UIDAI to operate the PECs in Tamil Nadu.

PECs are located in District Collectorates, Municipal Corporation HQs, Municipal Zonal Offices and Municipalities across the State of Tamil Nadu for Aadhaar Enrolment. The Aadhaar Enrolment and Mandatory Bio-metric updation was done offline from 03.10.2016 onwards and State Population Register (SPR) Online Software from 07.11.2016 onwards. The services are offered to the residents free of cost.

Aadhaar Enrolment & Aadhaar Generated Details for FY 2018-19

Enrolment Agency	Total no. of Enrolments (in lakh)	Aadhaar Generated from UIDAI portal (in lakh)
TACTV	7.21	3.56
ELCOT	7.89	3.68
Total	**15.10**	**7.24**

12.3. State Family Data Base (SFDB)

The Hon'ble Chief Minister during his reply to the Governor's Address in January 2019, announced the creation of a State Family Data base. Accordingly, TNeGA has taken up the work. SFDB will be the single source of resident data for Tamil Nadu. SFDB will be maintained in a digitized, centralized and secured manner for the purpose of seamless beneficiary identification to disburse benefits provided by different welfare schemes to eligible Citizens.

12.4. Know Your Government (KYG)

KYG will provide a single window access to information and services being provided by the Government of Tamil Nadu to Citizens and other stakeholders. This will be an AI and mobile app based service.

12.5. Tiny URL Service

Tiny URL enables departments to send approved documents via SMS, to help Citizens to download approved certificates 'anytime, anywhere'. So far, 83,08,842 persons have benefited.

12.6. Standardization and Accessibility of Government websites

All 32 District websites of Tamil Nadu were revamped using the S3WaaS (Secure, Scalable and Sugamya Website as a service) framework to make them responsive, accessible and adhere to Guidelines for Indian Government

Websites (GIGW) and Security guidelines. Secure, Scalable and Sugamya Website as a Service (S3WaaS) is a website generating and deployment product hosted on the National Cloud of National Informatics Centre (NIC). It leverages technology to generate secure websites using (GIGW) compliant templates which are highly customizable and can seamlessly be deployed on a scalable software defined infrastructure. TNeGA will take up standardization and accessibility of all Government websites in phased manner.

12.7. Makkal Number

As per the announcement made by the Hon'ble Deputy Chief Minister, in his Budget Speech 2018-19, TNeGA has created a Makkal Portal in which for each resident of Tamil Nadu an unique number has been created called

"Makkal Number". This Number will be the base for creating the State Family Database (SFDB) announced by the Hon'ble Chief Minister during his reply to the Governor's Address in January 2019. This will ensure a seamless, transparent and hasslefree access to all Government services for the Citizens.

12.8. Tamil Nadu Geographical Information System (TNGIS)

A Geographical Information System (GIS) refers to a system where geographic information is stored in layers and integrated with geographic software programs so that spatial information can be created, stored, manipulated, analyzed, and visualized as a map and present the results of all these operations for policy decisions.TNGIS-TNSSDI Portal **www.tngis.tn.gov.in** is a one-stop-source for all the geospatial data for the State of Tamil Nadu.

So far, 29 Stake holders departments are involved in this project.

- In TNGIS Framework, 358 TN layers and 68 Hilari's layers are hosted.

- Role based Access provided for around 499 Officials of various State Govt. Depts.

- Online Registration for G2C, **4282** Public users are registered in the portal.

12.9. IT Security Audit

To protect sensitive information and critical data of organizations from unauthorized users, hackers, malicious web application, IT security audit of the websites and Applications is being done by TNeGA for which a sum of Rs. 1.76 Crore have been sanctioned. CERT-IN approved empanelled vendors of TNeGA are engaged for carrying out the security audit of the Government Websites/Applications.

12.10. Amma e-Gramam

The Hon'ble Chief Minister had announced the scheme "Amma e-Gramam" on the floor of the Tamil Nadu Legislative Assembly under the rule 110 ofthe Tamil Nadu Legislative Assembly rules. Tele-medicine, tele-education, LED lighting, WiFi hotspot, Skill Development, Digital Knowledge Centre and Common Service Centres will be made available at the selected villages.

This Project will be executed through Corporate Social Responsibility funds of public and private companies. Till date, Rs.1.62 crore has been received. In Phase-I this scheme will be implemented in 6 villages.

The six villages are listed below:-

Sl. No	Village Name	Block	District
1	Vannikonanthan	Melaneelithanallur	Tirunelveli
2	Periyampatti	Kariyamangalam	Dharmapuri
3	Nedimozhiyanur	Mayilam	Villupuram

4	Koneripatti	Edapadi	Salem
5	Vangal	Karur	Karur
6	Viswanatham	Sivakasi	Virudhunagar

12.11. G-IT (Group for IT) Forum

This is a monthly forum conducted at the Secretariat to enable officers at the helm of affairs, to listen to a thought leader in the Technology Domain.

12.12. Online Exam as a Service (EAAS)

Online examination system can be utilized by various Government departments to fill their vacancies in a shorter span of time and in a secured manner. It includes Pre-examination, Examination and Post examination activities. TNeGA has selected M/s.NSEIT Limited (National Stock Exchange Information Technology Limited) as the System Implementation Partner.

12.13. Engineering Admission/Counselling (TNEA)

The Higher Education Department proposed to conduct an Online counselling for candidates opting for studies offered by institutions functioning under Directorate of Technical Education (DOTE). TNeGA renders technical assistance and bestows technical knowhow for the development of software to be used for Online counselling and coordinating with DOTE to accomplish this robust exercise.

12.14. e-Office

e-Office is a tool of applications for conducting office procedures electronically. The e-Office would enable the Electronic File Management System for speedy disposals of files. The workflow management helps in creation, movement, monitoring and approval of files electronically resulting in better utilization

of manpower, thereby avoiding delays, leading to better governance.

12.15. e-Adangal Web application

Adangal is considered as an important base Revenue Department document for arriving at the agricultural production at village / taluk / district and State level. It is village account No.2 that is maintained by the Village Administrative Officer (VAO). TNeGA has developed the web version of the "Adangal". The e-Adangal web application was launched by Hon'ble Chief Minister of Tamil Nadu on 26.10.2018.

12.16. e-Adangal Mobile application:

Tamil Nadu e-Governance Agency has developed the mobile application for Adangal. This was launched on 05.03.2019. The entire gamut of life cycle of e-Adangal services are provided through the mobile App for ease of use for both farmers and officials.

13. Compendium of e-Governance initiatives

Compendium on e-Governance Initiatives in our State was launched during the CII – Connect 2018 event held on 08.10.2018 at Chennai. This Compendium disseminate the initiatives and innovations of all Government Departments to the General Public.

14. Capacity Building

Capacity Building is one of the Mission Mode Projects (MMP) under National e-Governance Plan (NeGP), Ministry of Electronics and Information Technology (MeitY). The objective of Capacity Building scheme is to provide professional support to political and policy level decision makers.

The following Training Programmes are being conducted under Capacity Building Scheme:-

- e-Sign Awareness Programme

- Design Thinking Programme

- Training on e-office

**Figure-36 :
Training on Capacity Building and
Implementation**

Figure-37
Training on Capacity Building and Implementation

15. Software Applications developed by TNeGA:-

S. No	Name of Dept	Project Name	URL
1	Tamil Nadu Housing Board	Tamil Nadu Housing Board (TNHB) - Tamil Nadu Government Rental Housing Schemes (TNGRHS)	https://tnhb.tn.gov.in/pages/view/tngrhs
2.	Tamil Nadu Housing Board	Tamil Nadu Housing Board (TNHB) – Board Rental Management System	https://tnhb.tn.gov.in/
3.	Tamil Nadu State Disaster Management Agency (TNSDMA)	Tamil Nadu State Disaster Management Agency (TNSDMA) - Website Development	https://tnsdma.tn.gov.in/
4	Tamil Nadu e-Governance Agency	Asset Management System (AMS)	https://ams.tnegov.in
5	Labour Department	Legal Metrology Complaint Tracking System (LMCTS)	https:// tnlegalmetrology.in/

6	Tamil Nadu Archives and Historical Research Department	Tamil Nadu Digi Archives Web Portal	https://digiarchives.tn.gov.in
7	CMDA	Development of Web Enabled Single Window System for On-line Submission, Processing and Disposal of Planning Permission Applications, Building Permission Applications, Completion Certificate and Occupancy Certificate.	https://onlineppacmda.tn.gov.in
8	TNeGA	Tami Nadu Geographical Information system	https://tngis.tn.gov.in

9	TNeGA	e-District Project Phase –I (92 Services) [e-Sevai.] e-District Project Phase-II(additional 319 Services)[e-Sevai.].	https://tnesevai.tn.gov.in/
10	Periyar University	Online admission Software for Distance education	http://pride.cmschennai.com/
11	Forest Departme nt	Development of Software Application for conducting Online Examination for TNFUSRC	https://www.forests.tn.gov.in/pages/view/tn-forest-news
12	TNeGA - Online Examinati on System	Online examination system can be utilized by various Government departments to fill their vacancies in a shorter span of time and in a secured manner. It includes Pre-examination, Examination and Post examination activities.	1.Teachers Recruitment Board TET Examination URL - https://trbtet.onlineregistrationform.org/TNTRB/index.jsp 2.PG Computer Instructor URL - https://trbpgc.onlineregistrationform.org/TRBPGCI/ 3.Tamil Nadu Pollution Control Board URL - https://tnpcb.onlineregistrationform.org/TNPCB/LoginAction_loadIndex.action

13	ELCOT	Open Government Data	https://tn.data.gov.in/
14	Employment and Training dept	Virtual Learning Portal and e-Learning Platform with Analytics Dashboard.	https://tamilnaducareerservices.tn.gov.in/
15	TNeGA	State Service Delivery Gateway	http://www.tn.gov.in/
16	TNeGA	e-District Project	https://edistricts.tn.gov.in:8443/certificates_csc/
17	All Government Departments	electronics Transaction Aggregation and Analysis Layer (e-Taal)	https://etaal.gov.in
18	Commissionerate of Land Reforms	Chief Minister's UzhavarPathukappuThittam (CMUPT)	https://oap.tn.gov.in/cmupt/ https://oap.tn.gov.in/cmupt/
19	TNeGA	Permanent Enrolment Centres(Aadhaar Enrolment for above 5 years age category)	https://uidai.gov.in/aadhaar_dashboard/
20	TNeGA	SMS based Tracking System	https://services.mgov.gov.in/
21	TNeGA	State Resident Data Hub (SRDH)	https://makkal.tn.gov.in/makkal/login

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22	TNeGA	Online Patta Transfer	https://tamilnilam.tn.gov.in/CSC https://tamilnilam.tn.gov.in/Revenue/login.html
23	TNeGA	Tiny URL	https://tnegov.in/login
24	TNeGA	PradhanMantriGramin Digital Saksharta Abhiyan (PMGDISHA)	https://www.pmgdisha.in

16. Awards

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. The awards were given by Hon'ble Chief Minister of Tamil Nadu on 08.10.2018 at CONNECT 2018 event.

Figure-38

Seminor on IT Initiaties in CONNECT-2018

17. Awards for TNeGA

17.1. Award for Single Window System (e-Biz) developed by TNeGA

Tamil Nadu e-Governance Agency (TNeGA) received an award for promoting ease of doing business by developing an investor facilitation portal that provides single window clearance to industrial proposals in the State.

The award was given in recognition of simplification of procedure and ease with which

clearances from various authorities can be procured by a business.

Figure-39

17.2. Web Ratna Award

Digital India Awards have been instituted by Ministry of Electronics and Information Technology (MeitY) to promote exemplary initiatives in e-Governance using the medium of World Wide Web.

Websites and Portals with enhanced accessibility to meet citizen's expectation at various levels has been given " Web Ratna" under various categories.

18. Financial Status

Tamil Nadu e-Governance Agency is receiving service charges through Arasu e-Sevai Centers for offering online services to Citizens based on the revenue sharing pattern approved by the State Apex Committee.

Agency	Revenue share		
	Non PSUs/PSUs	TNeGA	DeGs
Non PSUs	80%	15%	5%
PSUs	70%	25%	5%

The financial performances of TNeGA as per Audited statements are as follows:-

	2015-16 Rs. in Cr.	2016-17 Rs. in Cr.	2017-18 Rs. in Cr.	2018-19 Rs. in Cr. (Un-audited)
Total Income	5.30	3.00	7.50	12.30
Total Expenditure	8.71	3.00	8.08	10.50
Surplus/ Deficit	(-) 3.41	-	(-) 0.58	(+)1.80

CHAPTER -4

TAMIL NADU ARASU CABLE TV CORPORATION LIMITED

1. Introduction

Arasu Cable TV Corporation Limited, was incorporated on 04.10.2007, as a Company under the Companies Act, 1956. Before the advent of the Corporation, the market was dominated by a few private Multi System Operators (MSO), who were charging exorbitant subscriptions from the public. In May 2011, the Hon'ble Chief Minister of Tamil Nadu revamped Arasu Cable TV Corporation to fulfil her commitment to provide livelihood to Local Cable TV Operators (LCOs) and also high quality Cable TV service to the public. The Corporation was renamed as the "Tamil Nadu Arasu Cable TV Corporation Limited" (TACTV).

2. Vision

The Vision is to provide high quality Cable TV, e-sevai and Internet services to the public at an affordable cost using the latest and emerging Technologies.

3. Mission

- To provide high quality Cable TV service to the public at an affordable cost through the LCOs.
- To provide enabling environment to facilitate livelihood to LCOs through cable TV and Internet services.
- To phase out Analog transmission and promote Digital Cable TV services.
- To establish role model e-sevai front offices for the benefit of the public.
- To provide high quality Internet service to the public at an affordable cost through the LCOs.

4. Objectives

- To reach out to the maximum customer base under the regulations of Telecom Regulatory Authority of India (TRAI) for distribution of digital cable TV services.
- To promote livelihood of the LCOs registered with the Corporation.
- To provide citizen centric services through Arasu e-Sevai Centers in Local Bodies, Taluk Offices and District Collectorates.
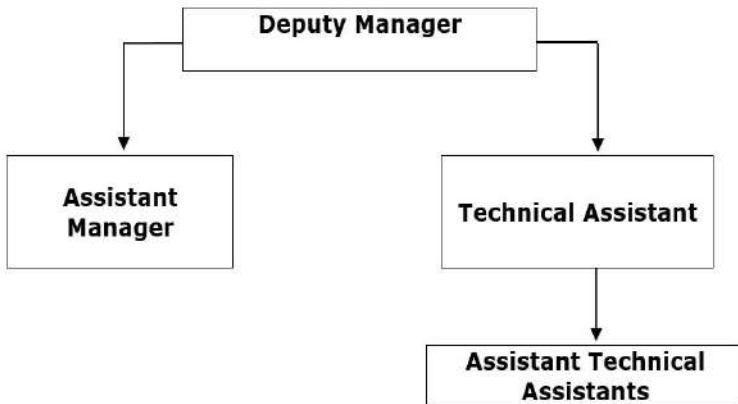- To provide Internet connectivity to every household.

5. Organization Structure

TACTV is headed by a Chairman and a Managing Director. The following chart depicts the Organization structure of the Corporation:-

State Level

District Level

6. Achievements

6.1. Analog Transmission of Cable TV services

The Hon'ble Chief Minister of Tamil Nadu announced on the floor of the Assembly on 30.08.2011 that an amount of Rs.3 Crore would be sanctioned to TACTV to provide quality analog services at an affordable cost of Rs.70/- being the monthly subscription payable by the subscribers to the LCOs on a revenue sharing basis, of which Rs.20/- would be paid to TACTV by the LCOs.

Head Ends for providing Cable TV Services were established by TACTV at five places i.e Chennai, Coimbatore, Thanjavur, Tirunelveli and Vellore. In addition, Control Rooms were taken on lease from the District COs/Taluk COs in another 77 places to provide Analog Cable TV services of the Corporation throughout Tamil Nadu from 02.09.2011 and from 20.10.2012 in Chennai city.

Due to the concerted efforts of Government, the number of subscribers steadily increased from 4.94 Lakh as on 02.09.2011 to 70.52 Lakh connected through 26,474 Local Cable TV Operators. Abiding by the orders of the Ministry of Information and Broadcasting (MIB), Government of India, transmission of Analog cable TV services had been discontinued by TACTV from September 2018.

6.2. Digital Cable TV Services

The Ministry of Information & Broadcasting, Government of India has mandated that the Cable TV operations have to be digitalized in four phases all over the Country, with the last phase deadline stipulated as 31.3.2017.

In accordance, TACTV as an MSO applied for DAS (Digital Addressable System) license for Chennai Metro Area on 05.07.2012 and for the rest of Tamil Nadu on 23.11.2012. The

provisional DAS License was issued to TACTV on 17.04.2017 for entire Tamil Nadu. TACTV is the first State Government Undertaking in the Cable TV industry to get DAS Licence in the Country.

TACTV floated a Global Tender on 06.05.2017 for procurement of 60 lakh Standard Definition Set Top Boxes (SD STB) and 10 Lakh High Definition Set Top Boxes (HD STB). Two successful Bidders were selected and Letter of Acceptance (LoA) issued for procurement of 60 Lakh SD STBs and 10 Lakh HD STBs.

In the meantime, TACTV upgraded its existing MPEG2 Digital Head End at Chennai to MPEG4 Digital Head End to ensure best quality pictures with higher channel capacity in Digital Transmission. The upgraded MPEG4 Digital Head End at Chennai and the distribution of Free Set Top Boxes were inaugurated by the Hon'ble Chief Minister on 01.09.2017.

So far, 34.51 lakh Digital SD Set-Top-Boxes have been distributed to the consumers through 16,907 LCOs.

Hon'ble Chief Minister launched High Definition (HD) cable TV service in Chennai, Salem, Coimbatore, Trichy and Madurai on 02.07.2018. So far, HD Digital Set-Top-Boxes have been distributed to 18,253 subscribers through 2154 LCOs. The HD cable TV services are now available in 12 locations in the State.

7. The New Tariff Order of Telecom Regulatory Authority of India (TRAI)

The new Tariff order of TRAI has allowed a maximum of Rs.130+GST as Network Capacity Fee (NCF) per subscriber for 100 Free-to-air Channels (FTA) and Rs.20+GST for every additional 25 Channels. However, TACTV in order to achieve the objective of providing the Digital Cable TV service at an affordable cost

has fixed the NCF as Rs.120+GST for 142 FTA channels and the Pay Channels are provided at the rates published by the broadcasters as per the channels chosen by the subscribers.

Under the new Tariff order, TRAI has recommended a revenue sharing between TACTV and LCO in the ratio of 55:45 of NCF. However, considering the livelihood of the LCOs,65% of NCF is given to them. Further, additional incentive up to 6% of NCF is also given to LCOs based on their performance in digital distribution.

TRAI has fixed 20% of the MRP of pay channels declared by Broadcastersas Distribution Fee and the same is shared by TACTV and LCO in the ratio of 50:50.

Additional revenue from Logical Channel Number (LCN), Middleware, Private Local Channels (PLCs), Video on Demand (VoD) etc., are being generated by calling for suitable proposals from time to time.

8. TACTV Arasu e-Sevai Centres

The Hon'ble Minister for IT announced on the Floor of the Assembly on 04.08.2014, that TACTV will establish and run Arasu e-Sevai Centres in all Districts. At present, TACTV is operating 661 Arasu e-Sevai Centres across the State. The Citizen services of various Government Departments (both Central and State) made available by TNeGA are provided through these Arasu e-Sevai Centres.

8.1. TNPSC Services

Tamil Nadu Public Service Commission has entrusted the task /service of obtaining the scanned copies of the certificates from the

qualified candidates of various recruitments through Arasu e-Sevai Centres of TACTV from 23.04.2018. As on 31.03.2019, 11,673 certificates have been uploaded.

8.2. Printing and issue of ID Cards

The service of issue of Identity cards to Pensioner / Family Pensioners has been launched on 16.04.2018 and Arasu e-Sevai Centres have issued 38,418 cards as on 31.03.2019. The same has been done for 4,832 Officers and Staff of the Secretariat. Also 35,12,424 EPIC have been issued to voters as on 31.03.2019. Certain Departments and Undertakings of the Government of Tamil Nadu also have contacted TACTV for printing of ID Cards for their staff through Arasu e-Sevai Centres.

8.3. Achievement of e-Sevai Centres

Within a period of **four** years from the launch of these **Arasu e-Sevai Centers 2,10,85,794** transactions have been made.

TACTV- CSC Service-wise Transaction Details

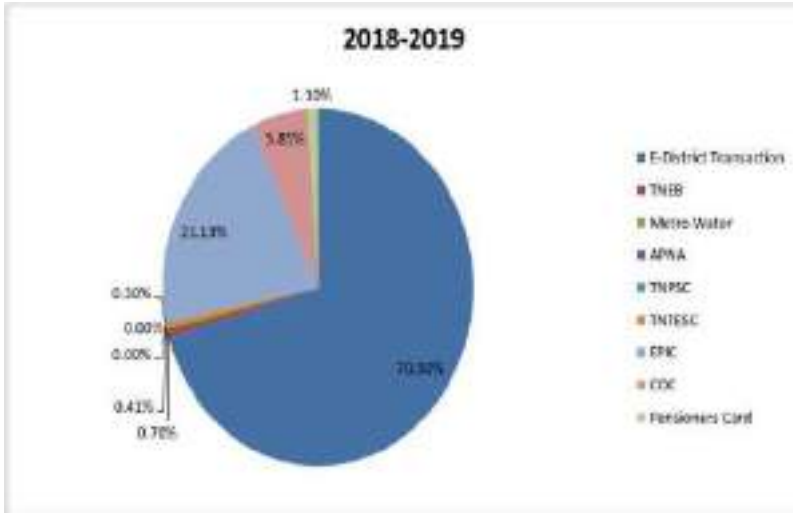| Sl No	Year	e-District Transaction	TNEB	Metro Water	APNA	TNPSC	TNTESC	EPIC	COC	Pensioners Card	Total
1	2014-2015	97684	24	0	275	6	0	0	6	0	37584
2	2015-2016	304186	14452	1645	9402326	10406	100	0	154117	0	3659034
3	2016-2017	2326658	55018	25251	3629009	1087	5531	1131140	201108	0	6085082
4	2017-2018	5018258	62272	24409	737323	6	2277	1640172	170914	0	7029028
5	2018-2019	347166	14672	14457	1	6	1005	740703	205312	38418	3505746
	Total	12576646	146438	74792	3968034	11673	10306	3512034	733143	38418	10085794

Figure-40

8.4. Empanelling Private Internet Browsing Centres

In order to expand the reach of Arasu e-Sevai Centres, TACTV floated an Expression of Interest (EoI) on 13.01.2018 to empanel interested private internet browsing centres to act as Arasu e-Sevai Centres on a revenue Sharing model. Accordingly, 500 applicants were given user Id and password to provide Government services through their Centres. This

was launched by the Hon'ble Chief Minister on 27.02.2019.

9. TACTV Aadhaar Permanent Enrolment Centres (PECs)

In G.O.(Ms.) No.10, Information Technology Department, dated 01-08-2016, the Government of Tamil Nadu appointed Tamil Nadu e-Governance Agency (TNeGA) / Directorate of e-Governance (DeG) as Registrar for conducting Aadhaar enrolment in Tamil Nadu. TNeGA / DeG authorized ELCOT and TACTV to act as Enrolment Agencies for Aadhaar enrolment in Tamil Nadu.

The Unique Identification Authority of India (UIDAI) has assigned Enrolment Agency Code for TACTV to carry out the enrolment activities. There are 311 PECs functioning at present with 483 counters in 32 Districts. In addition to the above, one "Mobile Aadhaar Enrolment Unit" is functioning within the limits of the Greater

Chennai Corporation to enable the Persons with Disability for Aadhaar enrolment.

27,37,579 number of new Aadhaar enrolment of citizens and **49,37,787** number of demographic and biometric updation have been done in TACTV PECs as on **31.03.2019.**

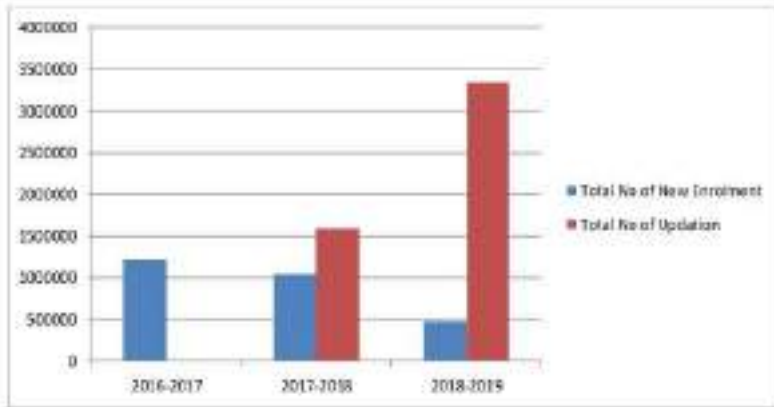| Performance of TACTV PECs			
S.No	Year	Total No. of New Enrolment	Total No. of Updation
1	2016-2017	12,16,147	Nil
2	2017-2018	10,41,427	15,82,526
3	2018-2019	4,80,005	33,55,261
Total		**27,37,579**	**49,37,787**

Transactions

Figure-41

In February 2019, TACTV commenced Aadhaar Enrolment of children in the age group of 0-5 through its PECs.

10. TACTV - Internet Services to Household

TACTV obtained Internet Service Provider (ISP) License (Class B) from the Department of Telecommunications, Ministry of Communication and Information Technology on 14.09.2015. The

Hon'ble Chief Minister announced "Internet to every household" scheme and the same was launched on 01.03.2016. Internet to households across the State is now being provided by TACTV through M/s.Railwire and Business Partners on a revenue sharing model.

In order to expand business exponentially, TACTV has proposed to form fully owned subsidiary for internet related services to the public and enterprise customers. As on 31.03.2019, Internet service is provided to 5697 subscribers through 28 Business partners and 5 aggregators. Once Tamil Nadu FiberNet Corporation Limited (TANFINET) implements BharatNet and TamilNet Projects across the State, TACTV will increase the revenue and subscriber base and compete with the major ISPs.

11. Free Broadband Internet to Government Schools

The Government have accorded Administrative Sanction for provision of free internet facility to 366 Government Higher Secondary Schools in Educationally Backward Blocks at an estimated cost of Rs.9.06 crore and released Financial Sanction of 1.23 crore for implementing in 50 Government Higher Secondary Schools through TACTV. This will be implemented once Bharat Net Project is implemented by TANFINET.

12. Financial performance of TACTV

TACTV has Government's share capital of Rs.25 crore. TACTV also received Rs.39.35 crore from Government as term loan till date. 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 Rs.235.90 crore in 2016-17 and

Rs.221.89 crore in 2017-18.

FINANCIAL YEAR	Revenue (INR in crores)	
2008–09	2.44	
2009–10	1.19	
2010–11	2.00	
2011–12	64.80	
2012–13	155.30	
2013–14	163.92	
2014–15	181.91	
2015–16	223.53	
2016–17	235.90	
2017–18	221.89	

After revamping of TACTV by the Hon'ble Chief Minister in 2011, TACTV increased its subscriber base and tapped all possible additional revenues resulting in profit for all Financial years from 2012-2013 to 2016-2017.

During the Financial year 2017-18, TACTV has earned revenue of Rs.221.90 crore with net loss of Rs.35.63 Crore. This net loss is due to

purchase of Set Top Boxes and depreciation on the value of Set Top Boxes.
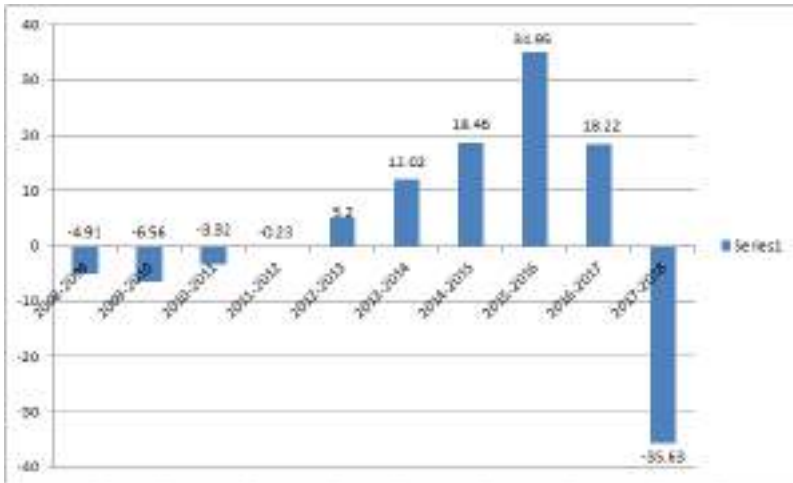
Source: TACTV Balance Sheet
Figure-42

During the Financial Year 2018-19, TACTV revenue is expected to be Rs.268.89 Crore. Due to Digitalization of Cable TV and distribution of Set Top Boxes (STBs) by TACTV, 36.40 Lakh STBs have been purchased for Rs.612.21 crore on supplier line of credit model. Due to the heavy investment on procurement of STBs by TACTV, there is a paucity of fund to meet the

repayment schedule and also expenditure relating to broadcasting. TACTV with the revenue generated has repaid Rs.186 crore to the vendor as on 31.03.2019. Since there is accumulated cash flow deficit on account of purchase of Set Top Boxes, TACTV has proposed to get a loan of Rs.100 crore during the Financial year 2019-20 with Government guarantee.

Further, TACTV will increase its subscriber base and revenue in the upcoming years by optimizing the cost of bandwidth through Tamil Nadu FibreNet Corporation Limited (TANFINET) infrastructure and also by introducing the advanced technology of Set Top Boxes.

CHAPTER-5

TAMIL VIRTUAL ACADEMY

1. Introduction

Tamil Virtual University (TVU) was established by the Government of Tamil Nadu on 18th May 2000 under the Tamil Nadu Co-operative Societies Act, 1983 and is functioning under the administrative control of the Information Technology Department. The TVU was renamed as Tamil Virtual Academy (TVA) with effect from 16th July 2010.

2. Vision

Reach out to the Tamil Diaspora across the globe through the Internet.

3. Mission

Provide virtual Tamil education to the Tamil Diaspora from alphabet to research.

4. Objectives

1. To provide Internet based Tamil resource access to the Tamil Diaspora across the globe and others who are interested in the Tamil language, literature, art, culture, etc.

2. To Provide Certificate, Diploma, Degree courses in collaboration with the Tamil University, Thanjavur.

3. To Compile Tamil learning materials on Tamil heritage.

4. To Compile the educational content developed by the Diaspora and publicize the same.

5. To Promote Tamil Computing.

6. All the above are sought to be achieved through the website, www.tamilvu.org.

5. Activities

5.1. Academic Programmes

TVA offers academic programmes like Certificate, Diploma & Degree courses in Tamil and also Diploma in Tamil Computing.

TVA offers academic programmes viz., certificate course, higher certificate course, diploma, higher diploma and degree (B.A. Tamilology) courses. There is no upper age limit for enrolling in these courses. The details are as follows:-

5.1.1. Primary Course

Primary course lessons are audio-visual in nature and are designed with pictures, sceneries, picture stories, poems and songs.

5.1.2. Certificate (equivalent to classes 1 to 6)

Certificate Course is offered at three levels as below:-

- Basic Level (equivalent to classes 1 & 2)

- Intermediate Level (equivalent to classes 3 & 4)

- Advanced Level (equivalent to classes 5 & 6)

5.1.3. Higher Certificate (equivalent to classes 7 to 12)

Higher Certificate Course is offered at three levels as below:-

- Grade 1 (equivalent to classes 7 & 8)

- Grade 2 (equivalent to classes 9 & 10)

- Grade 3 (equivalent to classes 11 & 12)

5.1.4. B.A. (Tamilology) Degree Programme

B.A. (Tamilology) Degree Programme is modular in its structure comprising of Diploma, Higher Diploma and Degree.

19,373 candidates from 75 countries have registered for the different courses offered by TVA.

The above academic programmes are provided through 93 contact centres in 20 countries. So far 9544 students have passed various levels. For example, 179 students from France, 1657 students from Sri Lanka, 1934 students from Sultanate of Oman, 2422 students from USA have passed.

The contact details of all 93 contact centres are available in the TVA website, www.tamilvu.org.

Primary, Basic, Intermediate and Advanced courses have been developed for students across the globe:

- Learn Tamil
- Tamil Karpom
- Thirukkural
- Technical Glossary

6. Online Tamil Computing Course

The Hon'ble Minister for Information Technology announced on the floor of the Tamil Nadu Legislative Assembly on 29th May 2018, that TVA will offer an online Diploma Course in Tamil Computing. The cost of the project is Rs.20.00 lakh. Students, researchers & enthusiasts of the Tamil language will benefit from this course.

7. Digital Library

TVA has created a Digital Library (www.tamildigitallibrary.in). The quality and quantity of the collection in the Digital Library is continuously improved with the addition of rare printed books, newspapers, periodicals, palm-leaf manuscripts, written manuscripts, photographs and audio-visual material. The website has been made accessible to the persons with disability.

7.1. Documentation and Archiving of Tamil Art & Culture

TVA preservesarchival material and documents in digital form and makes all digital content available online (www.tagavalaatruppadai.in), with suitable search facility.

7.2. Tamil Computing

TVA promotes research in Tamil Computing using the Tamil Software Development Fund (TSDF), develops basic Tamil language database and related Tamil software tools, Unicode fonts, etc. TVA also certifies Tamil Software and Tamil computing tools developed by public. TVA is a member of the Unicode Consortium, USA on behalf of the Government of Tamil Nadu.

8. Tamilar Tagavalaatruppadai

The Hon'ble Chief Minister of Tamil Nadu announced on the floor of the Tamil Nadu

Legislative Assembly that a comprehensive and collaborative repository containing details of all the achievements of the Tamils, Tamil language and literature shall be created, at an estimated cost of Rs.20.00 lakh. Accordingly, a "Tagavalaatruppadai" has been created and 70,600 images of Archaeological & Historical sites, Monuments, Excavations, Inscriptions, Religious places, Sculptures, Coins, Copper Plates and Paintings were captured as photographs and uploaded in the web portal with necessary metadata in standard format. This website www.tagavalaatruppadai.in was inaugurated by the Hon'ble Chief Minister on 11th October 2017. Further Documentation of archaeological & historical sites with images and updating of these in the website are under progress.

Figure-43

Tagavalaatruppadai Website

9. Creation of Digital Library

TVA has created a Digital Library (www.tamildigitallibrary.in) with collection of rare documents, books and periodicals, at a cost of Rs.1.00 crore and the same was inaugurated by the Hon'ble Chief Minister on 11th October 2017. Currently, 17,552 books and periodicals are online in the Digital Library in MARC21 format.

Figure-44

Digital Library Website

10. Digitization and Cataloguing of Palm-leaf Manuscripts

Palm-leaf Manuscripts available in the Dr.U.V.SwaminathaIyer Library, Directorate of Indian Medicine & Homeopathy and the International Institute of Tamil Studies, Taramani, Chennai, convey the knowledge about the land, people, education, medicine and

culture, etc., of a bygone era. Digitization and cataloguing of these Palm-leaf Manuscripts are being undertaken at a cost of Rs.1.05 crore. So far, 4,15,708 Palm-leaf manuscripts have been scanned and catalogued.

11. Monthly Lecture Series

In order to promote Tamil Heritage, Art & Culture, TVA organises monthly lecture series through renowned scholars and experts from various fields of knowledge. The lecture is recorded and webcasted via the TVA website. So far, 49 lectures have been organized in various disciplines viz. sculptures, languages and ancient culture of Tamils, etc.

12. Tamil Text and Speech Computing Tools

Tamil Text and Speech Computing Tools are being developed by TVA. Text computing tools will highlight the errors in the text and also offer suggestions. The Grammar Checker will be

useful to children as well as adults to learn and use appropriate vocabulary and grammatical rules. Speech processing tool will also be developed as an assistive aid for the persons with visual disability, to read and write with ease.

13. Sentence Patterns, Structures and Rules in Tamil for Machine Translation

Under the TANII scheme for the year 2017–2018, the project "**Sentence Patterns, Structures and Rules in Tamil for Machine Translation"** has been taken up at a cost of Rs.72.72 lakh**.** The aim of the project is to identify sentence patterns, structures and rules in Tamil as is classified in the English language.

14. Development of New Syllabus

Based on popular demand, the Academic Syllabus of TVA will be redesigned by the Syllabus Committee.

15. Outreach Initiatives

15.1. Kani Tamil Peravai – A Forum for Tamil Computing

"Kani Tamil Peravai" has been created in 100 higher educational institutions across Tamil Nadu, at a cost of Rs.25.00 lakh, to create awareness on the necessity for Tamil Computing. At present, 10,000 students from various colleges and universities have been enrolled as members of "Kani Tamil Peravai". TVA offers training to the students to develop Tamil blogs, Tamil apps, etc. Action is being taken to establish an additional 100 Kani Tamil Peravai.

15.2. Tamil Perungkalanjiyam – Tamil Mega Encyclopedia Project

TVA collects web-based Tamil content and develops "**Tamil Perungkalanjiyam**". More than 84,000 Tamil articles from the field of agriculture, fisheries, chemistry, biology, physics

etc. have been received and uploaded in the TVA website**.** It is proposed to offer the same in multimedia content in future.

15.3. Localization of Khan Academy's Educational videos

TVA is localizing educational videos of M/s. Khan Academy, USA in association with M/s.Vetrivel Foundation, USA. So far, 1913 videos have been uploaded in the TVA website and YouTube channel.

15.4. Creative Commons Initiatives

In G.O.(Ms) No. 105, Tamil Development and Information (TD2-2) Department, dated 1st July 2016, orders have been issued to publish Tamil related works (Books, Ph.D. Theses, Research Articles etc.) of Tamil Development Department and Tamil University's Publications as per Creative Commons for sharing academic knowledge in Tamil, legally. More than 17,552

books and periodicals have been uploaded in the TVA website under this initiative. TVA and Wikipedia collaboratively organised awareness programmes for school and college students to increase the usage of Tamil language.

CHAPTER-6

TAMIL NADU FIBRENET CORPORATION LIMITED (TANFINET)

1. Introduction

Tamil Nadu FibreNet Corporation Limited (TANFINET) is a Public sector undertaking of the State Government incorporated on 08.06.2018 under the Companies Act, 2013.

2. Vision

To empower every individual and households in Tamil Nadu by harnessing the power of Information Technology enabled through high-speed bandwidth and low latency connectivity.

3. Mission

To connect 12,524 Village Panchayats, 528 Town Panchayats, 121 Municipalities and 15 Corporations of Tamil Nadu with high speed bandwidth and low latency digital infrastructure

using Optic Fibre Cable (OFC), under the
BharatNet and TamilNet projects.

4. Organization Structure
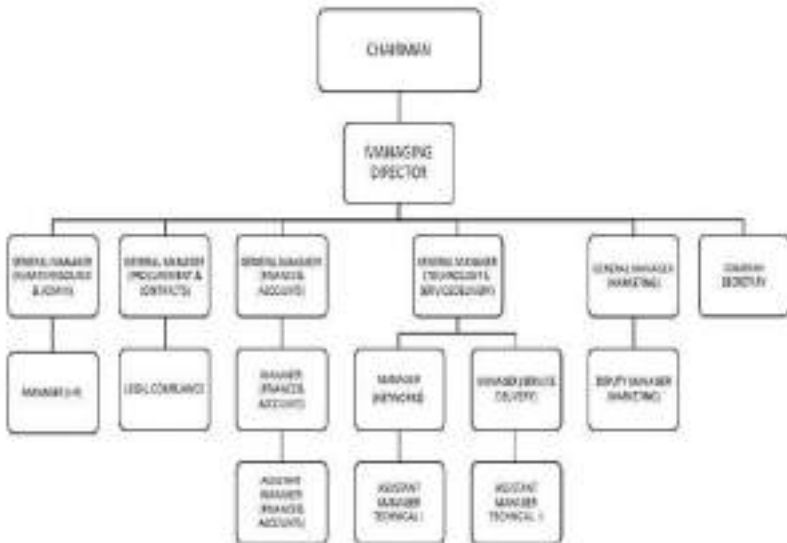
5. BharatNet

BharatNet, a project of the Government of
India, envisages connecting all Village
Panchayats of the country with high speed
bandwidth using Optical Fibre Cable (OFC).
Hon'ble Chief Minister announced under Rule

110 of the Tamil Nadu Legislative Assembly Rules, on 14.09.2015, that the BharatNet Scheme of Government of India will be implemented in Tamil Nadu through a State-led Model and a Special Purpose Vehicle (SPV) named "Tamil Nadu FibreNet Corporation Limited" will be set up for the purpose.

Accordingly, administrative sanction was accorded for the formation of Tamil Nadu Fibrenet Corporation Limited (TANFINET) and the Memorandum of Association (MoA) and Articles of Association (AoA) of the TANFINET was also approved. TANFINET was incorporated under the Companies Act, 2013 on 08.06.2018.

Under this project, all 12,524 Village Panchayats of the State will be provided with a minimum scalable bandwidth of 1 Gbps.

State Level Implementation Committee (SLIC) was formed under the Chairmanship of Chief Secretary to Government of Tamil Nadu

with members from Universal Services Obligation Fund (USOF) and Bharat Broadband Network Limited (BBNL), to overview the BharatNet Phase II Project in Tamil Nadu.

Government of India has approved the project in GPON-Linear method at an estimated cost of Rs.1230.90 Crores. Based on the Revised linear architecture, a revised DPR with an estimate of Rs.2411.00 crore has been sent to Government of India for approval and the same is awaited.

TANFINET will develop, execute, operate and maintain the infrastructure in Tamil Nadu. TANFINET is preparing Request for Proposal (RFP) for selecting Project Implementing Agency (PIA) for implementing the project across the State.

6. TamilNet

Hon'ble Chief Minister announced on the floor of the Legislative Assembly under Rule 110 of the Tamil Nadu Legislative Assembly Rules, on 14.07.2017, that a scheme called "TamilNet" will be implemented to connect all the Corporations, Municipalities and Town Panchayats of the State through high speed bandwidth using optical fibre network, thereby enabling the urban citizens to reap the benefits of the Digital Revolution and avail the services of Government Departments at their doorsteps.

During the departmental review meeting held by Hon'ble Chief Minister on 16.05.2018, it was decided that a DPR may be prepared to establish an integrated infrastructure combining TamilNet and BharatNet.
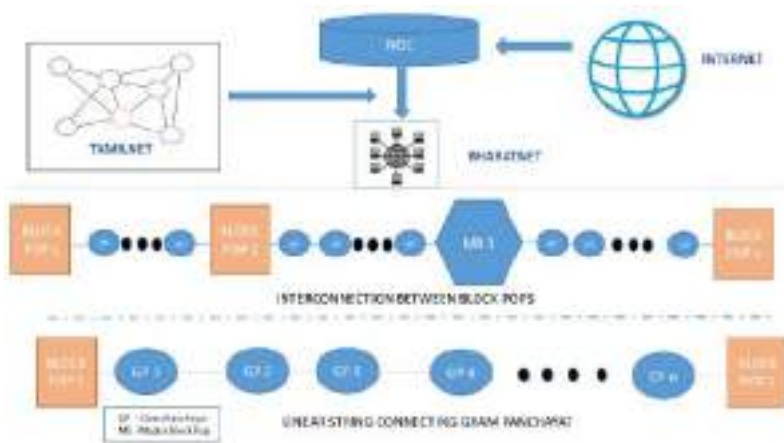
It has been decided to utilize the existing and proposed fibre networks of TANTRANSCO and TANFINET for building the network for

TamilNet. This project will be closely integrated with the BharatNet project to establish an Integrated Digital Infrastructure (IDI) combining TamilNet and BharatNet.

7. Network Architecture for the Integrated Digital Infrastructure

Integrated Digital Infrastructure (IDI) is a comprehensive state-of-the-art network across Tamil Nadu to be built by integrating BharatNet and TamilNet. The infrastructure is capable of reaching all households in urban and rural areas and capable of delivering high speed, scalable bandwidth. The network is a green field one, with around 55,000 km of OFC spread across the State connecting all local bodies. The OFC will be laid in aerial and underground mode. In cases where it is not feasible to lay cables, Radio Frequency (RF) / Free Space Optical Communications (FSOC) connections will be established.

The block schematic and the adjoining figure together illustrate the nature of the project on the ground, wherein the Blocks, Gram Panchayats, and fibre optic cable are shown.

Figure-45 :
Ramanathapuram District

This layered network is designed with technologies like DWDM (Dense Wavelength Division Multiplexing), MPLS (Multiprotocol Label Switching) and controlled through SOC (Security Operations Centers), OSS (Operational Support System).

Hyper Converged Infrastructure (HCI) and Software Defined Network (SDN) based Network Operating Centre (NOC) are planned to be established at Chennai.

The IDI and the associated centralized facility is inherently capable of supporting the realization of "Citizen Centric Governance Vision", in Compute, Storage, and Communication.

CHAPTER-7

ICT ACADEMY OF TAMIL NADU (ICTACT)

1. Introduction

ICTACT is a joint initiative of the Government of India, Government of Tamil Nadu and the IT/ITeS Industries. It is a non-profitable autonomous organization focusing on improving the standard of students graduating from various institutions in Tamil Nadu, to make them industry-ready and immediately deployable in the ICT industry. The Academy is governed by an autonomous Board of Governors with representatives from the Government of Tamil Nadu and leading companies representing the IT/ITeS sector.

2. Vision

To make the students ICT industry ready.

3. Mission

To collaborate with public and private organizations, to create, integrate and disseminate knowledge in the field of ICT to bridge the gap between academic output and industry requirements thus providing every learner an equal opportunity to become industry ready.

4. Objectives

- To train college students as per the skill requirements of the ICT industry.

- To generate employment especially in Tier-II and III locations of Tamil Nadu.

5. Activities

ICT Academy has been working through a seven pillar program in the areas of Faculty Development, Student Skill Development, Entrepreneurship Development, Youth Empowerment, Industry-Institute Interaction,

Digital Empowerment and Research & Publications.

5.1. Faculty Development

- ➢ 7,949 faculty members have been trained through 283 Faculty Development Programs in the State of Tamil Nadu.

- ➢ Four Technology Conclaves were conducted, benefitting 600 Faculty Members across the State of Tamil Nadu.

5.2. Skill Development

ICTACT

- ➢ is recognized as Training Provider by NASSCOM, the IT-ITeS Sector Skill Council India setup under the National Skill Development Corporation (NSDC) to conduct courses in IT-ITeS sector as per the standards.

- ➢ has trained and certified 700 students in Advanced IT / ITES as part of

Employability Skill Program approved by the Tamil Nadu Skill Development Corporation (TNSDC).

➢ has trained and certified 90 SC / SCA / ST community unemployed youth in Telecom and Retail sector as part of Employability Skill Program, approved by the Tamil Nadu Adi Dravidar Housing and Development Corporation Limited (TAHDCO).

➢ has trained and certified 117 unemployed youth on Banking, Financial Services and Insurance (BFSI) and 456 youth on Retail Sector as part of Employability Skill Program approved by Tamil Nadu Skill Development Corporation (TNSDC), Government of Tamil Nadu.

➢ has conducted Soft Skills & Industry Awareness Training programmes for 4637 final year students of Govt. Arts & Science Colleges across Tamil Nadu Approved by

the Tamil Nadu State Council for Higher Education (TANSCHE).

➢ has trained 80 girl children in Social Welfare Homes of Tamil Nadu approved by the Social Welfare & Nutritious Meal Scheme Department.

➢ has conducted "Skillsaathi" Career Counseling Workshop covering 64,219 Students across Tamil Nadu, approved by National Skill Development Corporation (NSDC).

5.3. Entrepreneurship Development

ICTACT

➢ has conducted Entrepreneurship Development Training for 500 students approved by Small Industries Development Bank of India (SIDBI).

> has conducted 77 Entrepreneurship Awareness Seminars covering 21,968 Students across the state of Tamil Nadu.

5.4. Youth Empowerment

ICTACT

> has conducted "**ICT Academy Youth Talk 2018**" – A State Level talking contest for college students in Tamil Nadu. 7150 students participated inthe contest and the top student is sponsored with fully paid educational trip abroad.

> has conducted "**ICT Academy Youth Leadership Summit 2018**" in Coimbatore participated by 3000 students.

> has conducted "**ICT Academy Youth Technology Summit 2018**" in Chennai.

> has conducted "**ICT Academy Youth Innovation Summit 2018**" in Chennai

with more than 3000 students from across Tamil Nadu participating.

6. Research and Publications

ICTACT publishes 5 peer-reviewed scholarly Journals. These international journals are highly indexed in various international databases. So far, 1083 research papers have been published in these journals by researchers across the globe.

- 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)

7. Digital Empowerment

ICTACT as an Assessment and Certification Body for Pradhan Mantri Gramin Digital Saksharta Abhiyaan (PMGDISHA), a scheme of Government of India has assessed and certified 7,66,772 candidates in 2018-19.

8. Industry - Academia Interaction

BRIDGE is the flagship annual conference of ICT Academy, one of the largest industry academia interaction in India, which brings together Academic Leaders, Industry Executives and Government Policy makers to discuss, deliberate, debate and find solutions for developing next generation talent for India. ICTACT BRIDGE 2019 Conference was inaugurated by the Hon'ble Minister for Information Technology. The event saw 1200 participants across the state of Tamil Nadu which enabled discussions among the stakeholders on "Industry 4.0".

Figure-47

Figure-48
ICTACT BRIDGE 2019 Conference inaugurated
by the Hon'ble Minister (IT)

9. Government Projects completed in 2018-19

Sl. No	Name of the Project	Department
1	Employability Skill Training for 80 Students in Social Welfare Homes	Department of Social Welfare and Nutritious Meal Program, Government of Tamil Nadu
2	Advanced IT/ITES training provided to 700 college students.	Tamil Nadu Skill Development Corporation, Government of Tamil Nadu
3	Employability Skill Training Program for 90 college students.	Tamil Nadu Adi Dravidar Housing and Development Corporation Limited, Government of Tamil Nadu
4	Entrepreneurship Development training provided for 500 college students.	Small Industries Development Bank of India, Govt. Of India

Dr. M. MANIKANDAN

Minister for Information Technology