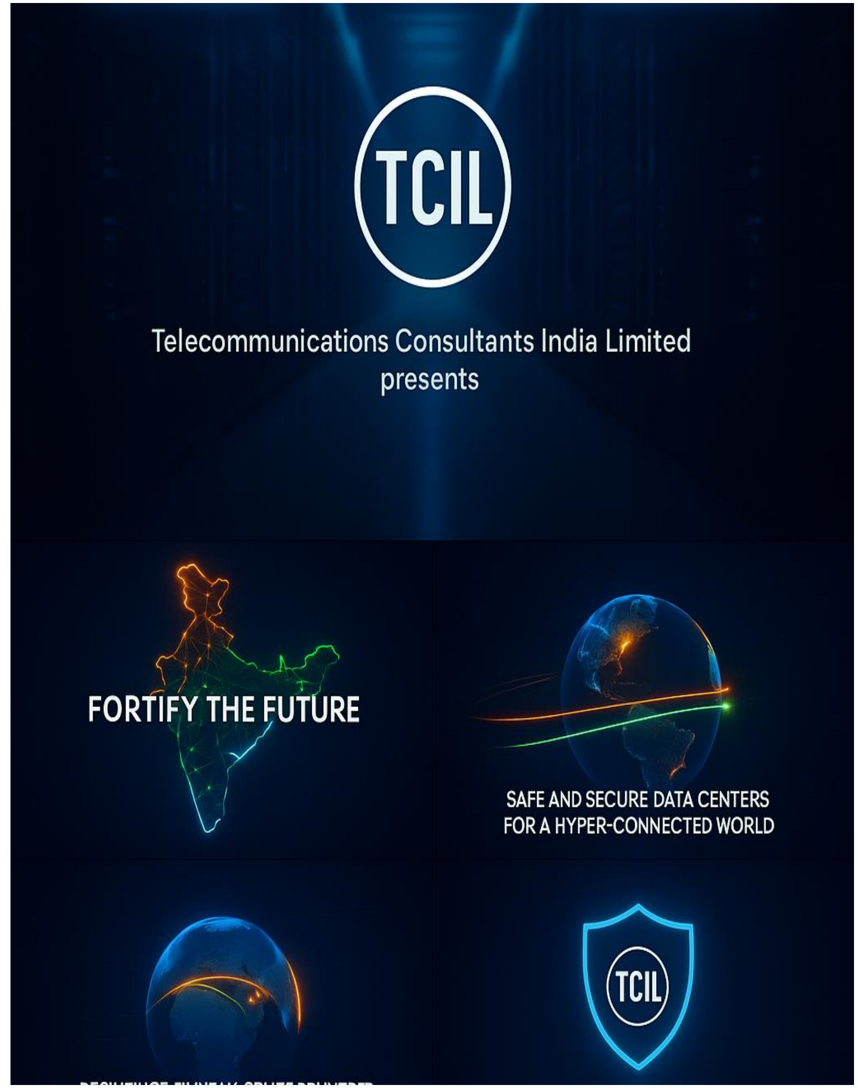
“Fortify the Future: Safe and Secure Data Centers for a Hyper-Connected World”



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TELECOMMUNICATIONS CONSULTANTS INDIA LTD.

TCIL AT A GLANCE

TELECOMMUNICATIONS CONSULTANTS INDIA LTD

BRIEF PROFILE

Set up in 1978;Authorized Capital Rs 160 Cr, Paidup Capital Rs. 59.2 Cr

Categorized as **Mini Ratna** Category I CPSE.

IS/ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, CMMI-5

Turnkey Project execution & Consultancy: Telecommunications, IT, Civil Infrastructure, Green Energy, Railway Signaling

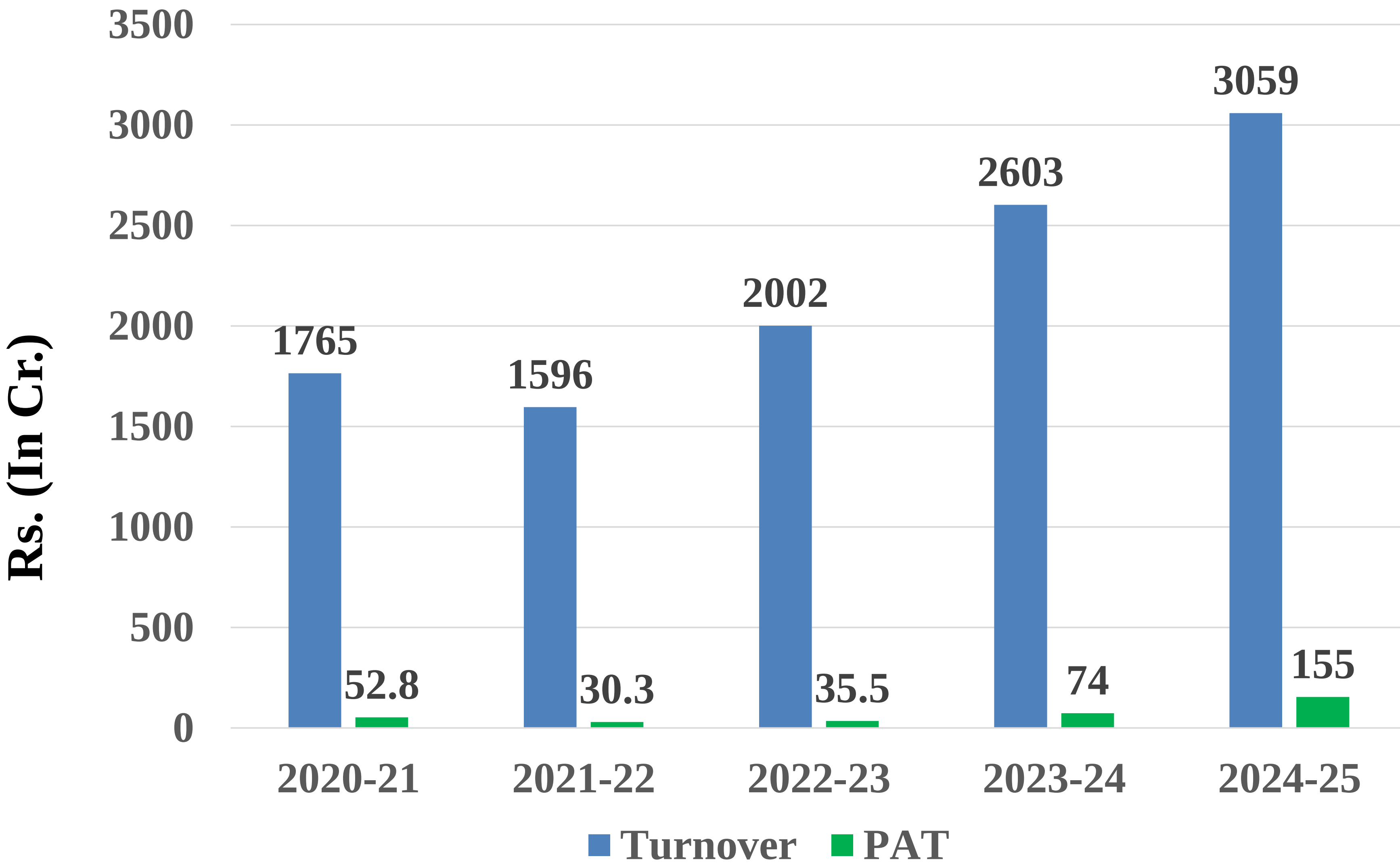
Delivered projects in **80 countries**.

Branch offices: **Saudi Arabia, Kuwait, Oman, Mauritius, Bhutan and Nepal**

Consistently **Profit Making** since inception. Paid more than Rs 4000 Cr cumulative dividend to GoI and Foreign exchange $320Mn repatriated.

Strategic Sale of 15% Stake of BHL raised ₹4,275 crore. Remaining stake valued at more than ₹14,000 crore

FINANCIAL STATEMENT: TOTAL INCOME AND PAT (Standalone)



SPECTRUM OF SERVICES

Telecommunication

Information Technology

Civil & Architecture

Managed Services

New Initiatives

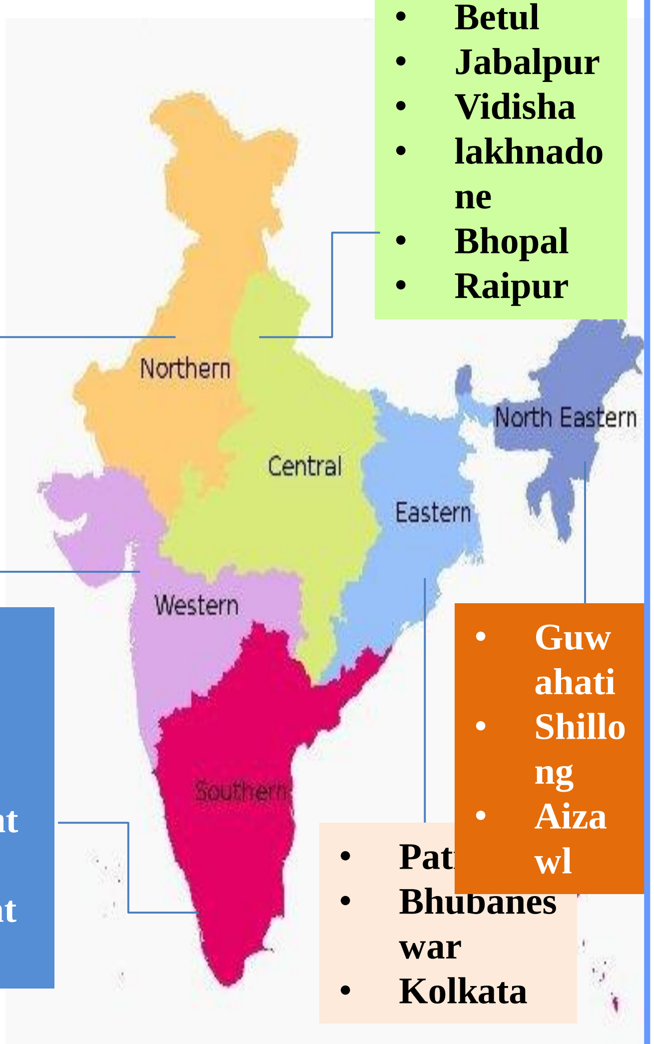
- Consultancy
- Feasibility Studies
- Planning & Design
- Engineering
- Turnkey Execution
- Quality Assurance
- Third Party Audit
- Project Management
- O&M
- Capacity Building

TCIL : GLOBAL PRESENCE

- Delhi
- Luckn ow
- Dehra dun
- Jamm u
- Srinag

- Mumb ai
- Jaipur
- Udaip

- Betul
- Jabalpur
- Vidisha
- lakhnado ne
- Bhopal
- Raipur



- Kochin
- Bengaluru
- Chennai
- Hyderabad
- Thiruvanant hapuram
- Vishakhapat nam

- Guw ahati
- Shillo ng
- Aiza wl

- Pat
- Bhubanes war
- Kolkata

- Projects in more than 80 countries in the World
- Overseas offices in Saudi Arabia, Kuwait, Oman, Mauritius, Nepal etc.

Major International Business Areas

KINGDOM OF SAUDI ARABIA	Maintenance of FTTH Network and expansion of indoor and outdoor Telecom Network.
KUWAIT	Maintenance of FTTH Network and expansion of outdoor Telecom Network (OFC and Copper Cable)
MAURITIUS	Maintenance and deployment of Fiber Network and provision of FTTH Network
OMAN	Outdoor Plant Network Project for Copper & OFC works
NEPAL	Civil Building and Road Projects.
BHUTAN	Renewable Energy Project

TCIL : SERVICES PORTFOLIO

DIGITAL TRANSFORMATION

- Digitization Projects
- e-Governance
- Digital ID
- IoT: Industrial IoT, Smart Building
- Automation:
  - e-office
  - ERP
  - Mail Messaging
  - Billing Platforms
- Digital Banking
- Digital Payments

DATA CENTER & CYBER SECURITY

- Cyber Security:
  - NextGen SOC
  - Network Security
  - Application Security
  - Data Security
  - Cloud Security
- Data Centers:
  - Modernizations
  - Ent. Private Cloud
  - SDN, SDI
  - FSO
  - Built to Suite DC
  - NextGen NOC
- Integrated Security
- Cloud

EMERGING TECHNOLOGIES

- Energy, Water, Gas Metering
- AI, Blockchain & Quantum computing
- Drone:
  - Agri-Tech
  - Perimeter Security & Surveillance
- Green Energy
- Smart Cities & ICCC
- AI CCTV Surveillance
- Big Data Analytics
- Metaverse and Digital Twin

TELECOM

- Captive 5G NW
- SDWAN
- Core & Access Network
- Tx Backbone, OFC
- RAN & DWDM
- MPLS
- E-Health
- E-Education
- Tracking & Traceability of bulk SMS Service
- Secure Mobile device

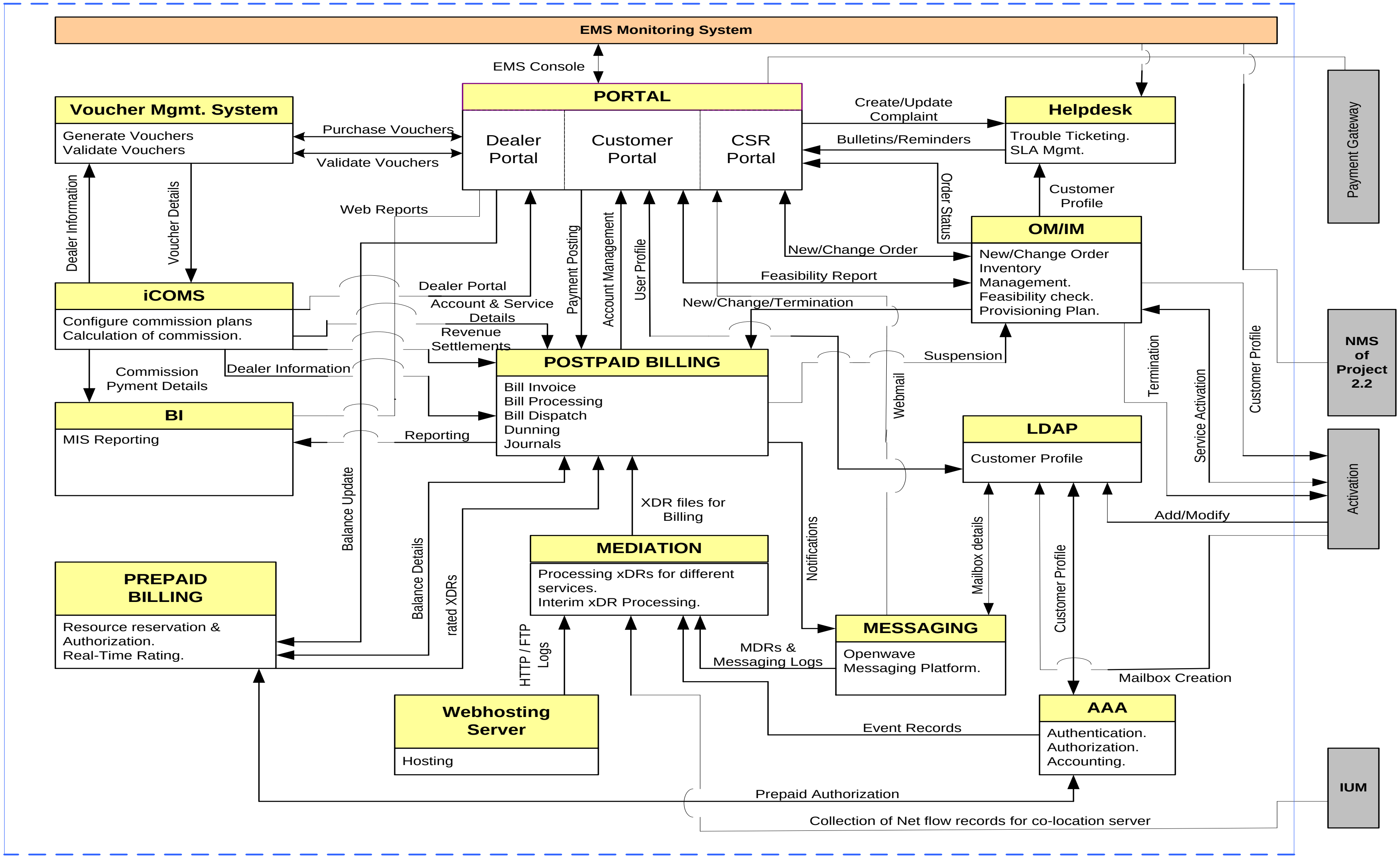
SDN – Software Defined Network, SDI – Software Defined Infrastructure, FSO – Full Stack Observability

TCIL-NIB II Project

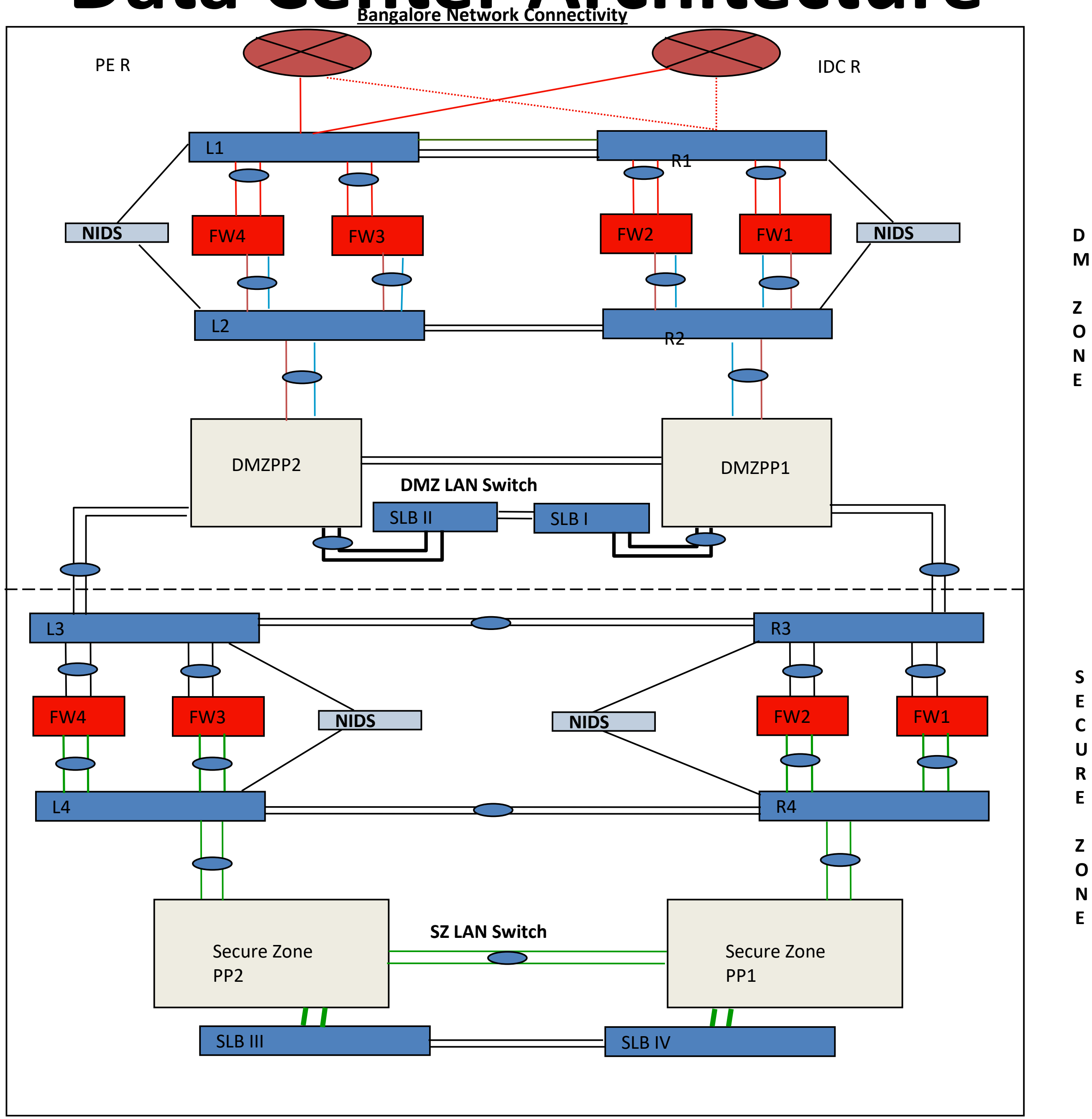
The turnkey implementation of "National Internet Backbone- Phase II" involved the following:

- **Project 1 : MPLS based IP Infrastructure**
- **Project 2.1 : Narrowband Access (Dialup Remote Access)**
- **Project 2.2 : Broadband Access (DSL Access)**
- **Project 3 : Messaging, Storage, Provisioning, Billing, Security, Order Management, Enterprise Management, AAA, Help Desk and Inventory Management.**

OSS Architecture



Data Center Architecture



Some of our Key Projects from Emerging Domains

- BSNL Project for Consolidation of **Data centers** and implementation of Billing /CRM Platform **(Rs. 478 Cr.)**
- **Digital Coast Guard Project:** This Large-Scale Green Field **Data Centre Project** involves Civil Construction of **Two Data Centres, Installation of IT & Non-IT Infrastructure of Tier-III Certified Data Centre** along with ERP package comprising surface and aviation ops logistic, Finance and HR management modules. **(Rs 588 Cr)**
- **Metaverse Based Digital Twin for THDC:** Project involves creation of AR-VR & Metaverse based digital twin of the Tehri Dam using High Precision 3D Scanners. **(Rs 6.32 Cr)**
- **Indian Air Force project for Secure Cellular Mobile Communication Devices**: Project for Defense Grade Secured Mobile Devices with Custom Binary along with Associated Centrally Managed Security Solutions. **(Rs 186 Cr)**
- **Indian Air Force Project for Setting up of Security Test Lab**: Use of Network Automation and Simulation tools to test critical network elements without putting them into actual Network. **(Rs 159 Cr)**
- **Digitisation of Forensic Lab in Maharashtra**: Digitisation of Forensic tools **(Rs 320 Cr)**
- **Maharashtra Legislative Secretariat Digitalisation Project:** The project involves digitisation of the operations of State Assembly with State of the Art Tools starting from digitisation of all records. (**Rs 165 Cr**)

The World is Hyper-Connected. Security Can’t Be an Afterthought.

- 90% of data created in last 2 years (Stat – IDC 2025).
- AI, 5G, IoT creating massive data flows with exponential attack surfaces.
- Governments and businesses are becoming digitally sovereign.
- The future depends on **secure, resilient digital infrastructure**.

The Hyperconnected World: Opportunities & Risks

- Every enterprise is now data-driven and cloud-anchored.
- Explosion of IoT, AI, and edge computing demands high uptime.
- Cyber threats and data breaches continue to escalate globally.
- Business continuity now depends on data centre resilience.

India & the New Digital Frontier

“Digital India 2.0 is data driven and security anchored.”

- India now one of the top 5 data center markets globally.
- 1.4 billion citizens digitally connected — every service creates data gravity.
- India and the Middle East are becoming data exchange bridges.
- **TCIL is** positioned to serve this cross-regional demand.

The Emerging Threat Landscape

- **From Physical to Cyber Convergence**
- 🔐 **Every rack is a risk surface.** Every connection is an entry point.

LAYER	THREAT EXAMPLE	RISK IMPACT
Physical	Power / HVAC failure, sabotage	Downtime & asset loss
Cyber	Ransomware, APTs, insider threats	Data breach & reputation
Network	DDoS, BGP hijack	Service denial
Supply Chain	Firmware exploits	Persistent compromise

TCIL’s Vision: Secure Digital Infrastructure Sovereignty

- Build and operate Tier III+ and Tier IV data centers for Govt & Enterprises.
- Integrate **Cyber Security Operations Center (CSOC)** within each facility.
- Enable **Uptime & Cyber Compliance by Design**.
- Partner with global OEMs & Indian innovation ecosystem.
- Promote Make-in-India equipment where possible.
- Contribute towards long term goal of “Viksit Bharat”

The TCIL Secure Data Center Stack

- **Fortified by Design – Integrated Across Physical & Digital Layers**

Layer	Technology / Feature
Physical	Tier III+ Infra
Power	UPS N+N, DG N+1, Smart Switchgear
Cooling	Intelligent CRAH/CRAC
Fire & Safety	VESDA + Inert Gas
Cyber	Zero Trust Networks
DCIM	Digital Twin Monitoring

Cybersecurity by Design

- Embedded Zero-Trust Architecture
- AI-based Threat Intelligence and Anomaly Detection
- Continuous Compliance (SOC2, ISO 27001, Uptime TCOS)
- Blockchain-based audit trails for data immutability
- Quantum-resilient encryption (2025-ready)

Fortifying the Future:

Safe & Secure Data Centres for a Hyperconnected World

A Tech–Strategic Outlook

The New Data Centre Paradigm

- Transition from traditional facilities to cloud-integrated, hybrid environments.
- AI-driven infrastructure for predictive maintenance and energy efficiency.
- Shift towards modular, scalable, and sustainable architecture.
- Security-by-design replacing reactive cybersecurity models.

Fortifying Data Centres: The Core Pillars

1. **Physical Security** – Surveillance, access control, and environmental monitoring.
2. **Cybersecurity Frameworks** – Zero Trust, network segmentation, and continuous monitoring.
3. **Data Integrity & Compliance** – Encryption, and regulatory readiness.
4. **Operational Resilience** – Disaster recovery, redundancy, and AI-based incident response.

Building Future-Ready Infrastructure

- Integration of AI and ML for automated threat detection.
- Edge data centres enabling faster processing and reduced latency.
- Green data centres with renewable energy and cooling innovations.
- Collaboration across ecosystem partners for cyber resilience.

Strategic Takeaways for Leaders

- Invest in adaptive, AI-empowered infrastructure.
- Prioritise cybersecurity as a board-level responsibility.
- Foster culture of compliance and continuous improvement.
- Data centre security is not a cost — it's the foundation of digital trust.
- Invest into tech savy manpower to take this Vision forward

Economic & Strategic Impact

“Safe Data is the New Oil.”

- Secures India’s and allied nations’ digital sovereignty.
- Attracts hyperscaler & GovTech investments.
- Creates jobs in engineering & cybersecurity.
- Establishes TCIL as the global integrator of trusted digital infrastructure.

Call to Action

- **Fortify the Future Together “Resilience Built In. Trust Delivered.”**

- Governments → Adopt secure digital infrastructure standards.
- OEMs → Co-innovate for cyber-physical resilience.
- TCIL → Build India’s reputation as a global secure data center hub.