

Sovereign Cloud for India's Digital Future



Executive Summary

India's enterprise cloud landscape is entering a period of structural change. AI-led workloads, digital public infrastructure, and increasingly strict data governance requirements are placing new demands on cloud platforms that demand that traditional on-premises environments and global public clouds are not always equipped to meet simultaneously.

This challenge has been further intensified by recent disruptions in the enterprise virtualization market, particularly changes to licensing and pricing models that introduce financial and legal uncertainty.

The white paper examines why sovereign cloud is emerging as a strategic necessity in India and how Larsen & Toubro-Vyoma's Sovereign Cloud Platform (SCP) addresses customer pain points across compliance, AI readiness, economics, and vendor risk. It

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combines infrastructure-level detail with strategic context to support informed decision-making by enterprise and government technology leaders.

Background- India's Cloud and AI Inflection Point

India's digital economy is scaling rapidly across governance, healthcare, BFSI, telecom, manufacturing, and consumer platforms. National initiatives such as Digital India and Atmanirbhar Bharat, coupled with sector-specific regulatory frameworks, are reinforcing the requirement for data localisation, auditability, and jurisdictional control.

At the same time, AI and GenAI adoption is accelerating. Industry estimates indicate that GenAI alone could contribute close to 1% of India's GDP annually, with AI-powered decision making already becoming mainstream in areas such as digital lending, and customer engagement. This convergence of regulation, AI scale, and economic pressure is forcing organisations to reassess not just where workloads run, but how cloud platforms are architected, governed, and financed.

Customer Challenges Driving the Shift to Sovereign Cloud

1. AI Scale Versus Infrastructure Obsolescence

GenAI model sizes are doubling every 6-9 months. GPU clusters procured today risk becoming inefficient or obsolete within 18 months if they are not part of a flexible, upgrade-ready cloud architecture. Enterprises need AI infrastructure that can scale, refresh, and adapt without repeated capital-intensive rebuilds.

2. Cost Volatility and Licensing Risk

Recent changes in enterprise virtualization licensing models have introduced cost volatility, reduced transparency, and increased legal exposure. For many organisations, infrastructure costs are no longer predictable over multi-year horizons, complicating budgeting and long-term planning.

3. Sovereignty and Regulatory Exposure

Public-sector bodies and regulated enterprises must ensure that sensitive data remains within national jurisdiction, governed by Indian law, and auditable under local regulatory

frameworks. Reliance on offshore infrastructure or opaque control planes introduces compliance and reputational risk.

4. Migration Complexity and Operational Risk

Large estates of virtualized workloads, legacy applications, and mission-critical systems cannot tolerate extended downtime or fragmented migrations. Organisations require platforms that support phased transitions, hybrid models, and continuity of governance during migration.

The Larsen & Toubro-Vyoma Sovereign Cloud Platform

Larsen & Toubro-Vyoma extends the eight-decade legacy of engineering, execution, and governance into next-generation digital infrastructure. Larsen & Toubro-Vyoma's Sovereign Cloud Platform is designed as a single-tenant, private sovereign cloud that delivers hyperscale capabilities without sacrificing control, compliance, or economic discipline.

SCP is not positioned as a public cloud alternative, nor as a traditional hyperconverged stack. It is engineered as a full control-plane-driven cloud platform, enabling organisations to build and operate their own sovereign cloud environments.

Architecture and Capabilities

At its core, SCP integrates compute, storage, networking, security, and AI services under a unified control plane, jointly developed with E2E Networks, leveraging more than a decade of hyperscale cloud engineering experience.

1. Infrastructure and Platform Services

- Virtual machine lifecycle management with encryption options and proactive threat protection
- Software-defined networking with integrated security controls
- Object and block storage with encryption at rest
- Native Kubernetes and container orchestration
- Managed database services

2. Security and Governance

- Role-based access control and multi-factor authentication
- Comprehensive audit trails for regulatory compliance
- Usage monitoring and transparent billing models
- Optional air-gapped deployment for highly sensitive or classified workloads

3. AI and ML Services

- GPU resource orchestration for AI and HPC workloads
- Integrated model management, versioning, and deployment
- Automated training pipelines and inference scaling
- Support for modern LLM and vector database architectures

Economic and Operational Impact

Internal studies indicate that organisations adopting SCP can achieve up to 53% cost savings over three years, with additional savings of approximately 20% by year six, compared to traditional public cloud models. These savings span infrastructure, licensing, and manpower.

Even relatively small deployments-starting at 6,400 cores and 32 GPUs, can reach break-even in approximately 16 months, with economies of scale improving as deployments grow.

Addressing the VMware Disruption: A Strategic Use Case

The post-acquisition restructuring of VMware licensing has exposed enterprises to increased costs, reduced support continuity, and legal disputes. For organisations seeking alternatives, migration to cloud-based virtual infrastructure is often the only viable path. Larsen & Toubro-Vyoma's SCP provides a vendor-neutral, open-source-based sovereign cloud capable of hosting VMware-equivalent workloads without lock-in. Unlike hyperconverged systems that are limited in scale or service-provider readiness, SCP is designed for:

- Private and multi-tenant deployments
- AI- and GPU-intensive workloads, and
- Regulated and sovereign environments

This positions Larsen & Toubro-Vyoma as a practical migration destination for enterprises seeking stability, compliance, and cost control.

Future Roadmap

Larsen & Toubro-Vyoma's roadmap focuses on:

- Expansion of hyperscale data centre capacity across key Indian metros
- Deeper AI services, including managed AI platforms and advanced compliance automation
- Support for emerging compute paradigms, including HPC and quantum-ready services
- Continued investment in sustainable, low-carbon infrastructure
- Expansion of ecosystem partnerships across regulated and public-interest sectors

Internal Differentiators

What distinguishes L&T Vyoma-

- Engineering-led infrastructure design and delivery
- End-to-end sovereign capability from hardware to governance
- Security embedded by architecture, not added later
- Customer-centric migration methodologies
- Operational resilience backed by strong SLAs and 24x7 support

Conclusion

As cloud becomes critical infrastructure rather than an IT utility, enterprises and public institutions must prioritise control, compliance, and durability alongside scale and performance. Therefore, Larsen & Toubro-Vyoma's Sovereign Cloud Platform combines hyperscale capability, AI readiness, etc into a single, coherent cloud model which helps it to position it as a credible foundation for India's next phase of digital growth.