

# BEYOND HYPERSCALERS:

## THE NEED FOR PURPOSE-BUILT CLOUD IN ENTERPRISE IT

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*As enterprises embrace hybrid and multicloud environments, they face increasing challenges in managing distributed workloads, controlling cloud costs, and scaling AI-driven applications. This whitepaper explores the limitations of conventional cloud models and the need for a unified solution that seamlessly integrates IaaS, PaaS, AI, security, and connectivity on the back of an open-source architecture that helps eliminate vendor lock-in. It also examines Tata Communications' Vayu Cloud, launched to help enterprises seamlessly orchestrate workloads across multicloud and hybrid environments, optimize cloud spend, and integrate AI capabilities within a secure and scalable framework.*

## Beyond Hyperscalers: The Need for Purpose-Built Cloud in Enterprise IT

Cloud computing has become the foundation of enterprise IT strategy. More than 80%-90% of Global 2000 enterprises already operate in a hybrid IT environment, and over 60% manage multiple clouds, with the average enterprise leveraging around 3.5 different cloud platforms. However, as organizations scale their cloud operations, they face increasing challenges in managing fragmented infrastructure, optimizing cloud costs, and ensuring security across distributed environments. At the same time, AI-driven applications are placing unprecedented demands on cloud infrastructure, making seamless data integration and workload orchestration essential.

To address these challenges, enterprises are shifting toward FinOps, AIOps, and SecOps frameworks to enhance cloud efficiency, optimize costs, and mitigate security risks. According to Avasant's [Hybrid Enterprise Cloud Services 2024-2025 Market Insights™](#), organizations across industries are leveraging these approaches to streamline their cloud strategies.

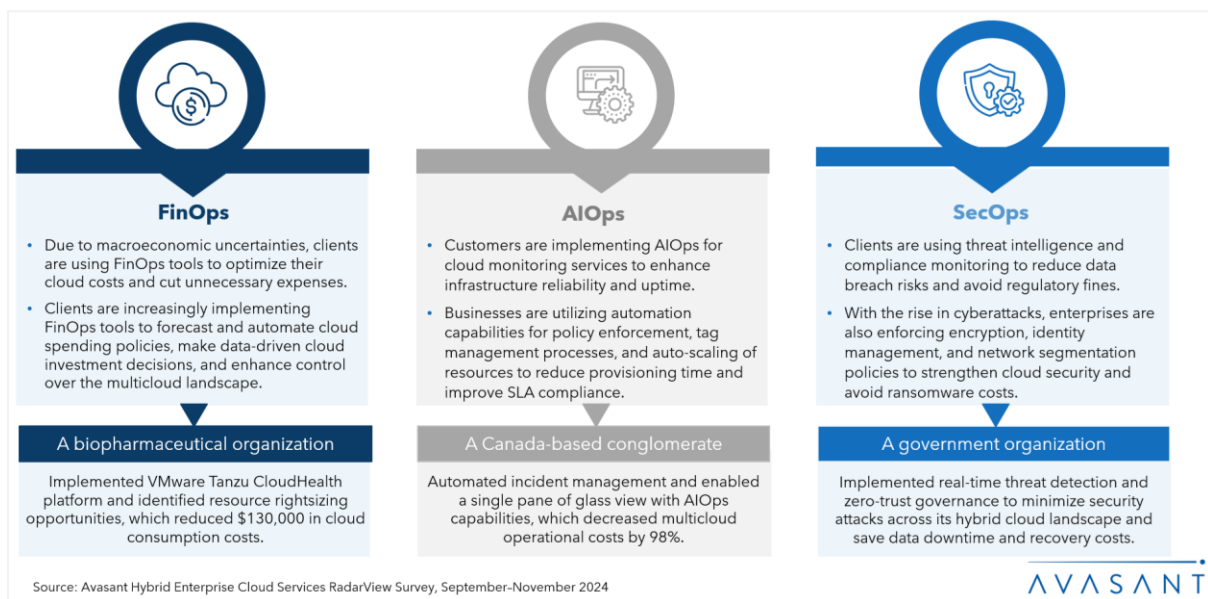


Figure 1: Organizations are enhancing operational efficiency across hybrid and multicloud environments by focusing on FinOps, AIOps, and SecOps capabilities

Today, organizations require a purpose-built cloud platform that not only unifies disparate environments but also integrates AI workloads, security, and cost optimization into a single framework.

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### The Limitations of Conventional Cloud Models in an AI-driven World

#### 1. *Fragmented multicloud infrastructure*

Enterprises today operate across a mix of public, private, and on-premises cloud environments, leading to a fragmented IT landscape. Workloads are distributed across hyperscalers, edge computing sites, and in-house data centers, creating operational silos that make management, cost control, and security enforcement more complex.

For example, a large BFSI enterprise might have customer-facing applications on a public cloud, internal office applications on a private cloud, and on-premises workloads. Without a unified control plane, they struggle to monitor performance, allocate resources efficiently, and ensure compliance across environments.

#### 2. *Rising cloud costs and lack of visibility*

Cloud cost inefficiencies are a growing concern, with enterprises frequently overpaying for underutilized infrastructure. Many CIOs report that while their business revenue grows at 10%-12% annually, their cloud spending increases by 25%-30%. This imbalance underscores the need for automated workload optimization and real-time cost governance to right-size cloud investments.

#### 3. *AI workloads and the data bottleneck*

AI adoption is accelerating, but enterprises struggle to transition from AI experimentation to scalable deployments. AI workloads require high-performance computing (HPC), GPU clusters, and optimized data pipelines, yet many organizations lack the infrastructure to support large-scale AI model training and inferencing.

For instance, an automotive company managing connected vehicle data found that 67% of its telemetry data was discarded due to high storage costs and inefficient data pipelines. Without an optimized cloud architecture, enterprises cannot fully capitalize on their AI initiatives.

#### 4. *Security and compliance in a distributed cloud environment*

As enterprises expand their cloud footprint, they become increasingly vulnerable to cyber threats. Multicloud security gaps, compliance risks, and ransomware attacks pose significant challenges. Enterprises need an integrated security framework that enforces encryption, identity management, and automated policy compliance across cloud environments.

For example, a government organization handling sensitive citizen data required real-time threat detection across its hybrid cloud infrastructure. Without a zero-

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trust security model, it was exposed to potential data breaches and compliance violations.

### The Emergence of a Purpose-built Cloud for AI-driven Enterprises

To address the challenges stated above, enterprises require a platform that provides seamless orchestration across multicloud and hybrid environments, allowing them to optimize performance, automate resource allocation, and maintain security compliance without vendor lock-in.

In line with this vision, Tata Communications launched the Vayu Cloud last week, introducing a structured approach to managing multicloud complexity, optimizing cloud investments, and securing workloads at scale.

During our interaction with Vice President and Global Head of Cloud and Edge Business Neelakantan Venkataraman and Bhaskar Gorti, executive vice president of Cloud and Cybersecurity Services at Tata Communications, they emphasized the need for a purpose-built cloud platform that integrates AI scalability, cost optimization, and security within a unified framework.

Tata Communications' Vayu Cloud enables enterprises to unify, optimize, and secure their cloud environments with the following capabilities:

- Unified cloud management: A single platform that seamlessly integrates IaaS, PaaS, AI, security, and connectivity, built on an open-source architecture to avoid vendor lock-in and enable consistent workload orchestration across hyperscalers, private clouds, and edge environments.
- AI-optimized infrastructure: Integrated GPU-as-a-Service and AI Studio to support scalable AI model training, inferencing, and AI life cycle management, eliminating infrastructure bottlenecks.
- Cost efficiency and FinOps integration: Automated workload placement, real-time cost governance, and multicloud spend optimization reduce unnecessary expenses and improve cloud ROI.
- Security and compliance: Built-in SecOps capabilities, including zero-trust security, encryption, threat detection, and compliance automation, protect data across distributed environments.
- Multicloud connectivity and optimization: A network-aware optimization layer that reduces egress costs and improves data transfer efficiency across cloud providers.
- Sustainable cloud infrastructure: Carbon-neutral cloud options and energy-efficient data centers, with plans to introduce direct liquid cooling for HPC for supporting enterprise ESG goals while maintaining performance.

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By integrating these features, Vayu Cloud enables enterprises to scale AI workloads, optimize cloud investments, and enforce security at every layer—offering a structured, purpose-built alternative to traditional cloud models.

### Conclusion

As enterprises navigate the complexities of hybrid and multicloud environments, they face mounting challenges in managing distributed workloads, controlling rising cloud costs, and scaling AI-driven applications. Organizations must move beyond traditional cloud models to remain competitive and adopt purpose-built cloud solutions that offer a unified solution, AI-ready infrastructure, cost efficiency, and integrated security. This approach not only drives innovation but also strengthens long-term resilience and operational control.



# About the authors



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## About Avasant

Avasant is a leading management consulting firm focused on translating the power of technology into realizable business strategies. Specializing in digital and IT transformation, sourcing advisory, global strategy, and governance services, Avasant prides itself on delivering high-value engagements through industry focused innovation and flexible client-based solutions.

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