



NCR ATLEOS

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Decoding the future of enterprise architecture: Edge vs. cloud computing

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Executive summary

In the face of rapid technological evolution and the accelerating pace of digital transformation, enterprises are reevaluating the strategic deployment of edge and cloud computing. AT&T India in partnership with NCR Atleos convened a high-level workshop titled “Edge vs. cloud computing: Competition or convergence?” as part of its Enterprise Leadership Forum in Bangalore, India. This peer-led forum brought together senior technology executives, industry experts and decision-makers to examine how modern enterprises are integrating edge and cloud to meet performance, scalability and business agility requirements.

This document captures the insights, strategic imperatives and real-world deployment experiences shared during the session. It offers an analytical view of how leaders are leveraging hybrid architectures to reconcile the unique advantages of edge and cloud technologies while addressing the operational, cultural and technical challenges that come with such convergence.

Introduction

Edge and cloud computing are no longer mutually exclusive paradigms. Instead, organizations increasingly view them as complementary components of a unified hybrid IT architecture. While the edge provides immediacy and proximity to data generation, the cloud offers centralized power and elastic scalability. The workshop explored this synthesis through a series of executive-level discussions and sector-specific insights, focusing on how enterprises are evolving their digital infrastructure to meet the growing demands of AI, IoT, real-time analytics and regulatory compliance.

Key themes and objectives

- **Enable strategic dialogue:** Facilitate candid and constructive discussions among senior technology leaders, encouraging the sharing of in-depth experiences, decision-making frameworks and innovation roadmaps that transcend theoretical analysis.
- **Highlight deployment experience:** Illuminate how leading organizations are practically deploying edge and cloud technologies to support mission-critical operations, from real-time industrial automation to globally distributed analytics systems, underscoring both the benefits and pitfalls encountered.
- **Bridge organizational silos:** Provide actionable strategies for aligning information technology (IT) and operational technology (OT) teams. This includes fostering shared accountability, creating integrated digital workflows and removing structural barriers that inhibit collaboration.
- **Surface critical challenges:** Uncover the root causes of implementation hurdles such as skill shortages, insufficient infrastructure readiness, fragmented digital strategies, cybersecurity risks and difficulties in adapting legacy systems to hybrid models.



Enterprise insights: Adoption patterns and drivers

Participants revealed how industry context shapes edge and cloud adoption trajectories:



Edge computing: In sectors such as manufacturing, logistics, energy and healthcare, edge computing enables on-site processing of data for rapid response scenarios. It supports use cases like machine vision, autonomous quality checks and predictive maintenance.



Cloud computing: Serving as the digital core for enterprises, cloud computing facilitates centralized control, integration of enterprise systems, high-volume data aggregation, AI model training and long-term analytics.

Key drivers include:

- Latency sensitivity: Edge ensures millisecond responsiveness when decisions must be executed in real time.
- Scalability and compute density: Cloud infrastructures offer virtually unlimited computational power, which is crucial for data-intensive tasks.
- Data sovereignty and regulatory compliance: Edge enables local data processing to adhere to jurisdiction-specific laws.
- Operational cost optimization: Cloud platforms allow cost-effective scaling, pay-as-you-go flexibility and reduced capital expenditures.

Are edge and cloud competing or converging?

The workshop revealed a prevailing shift in enterprise thinking: Rather than choosing between edge and cloud, organizations are engineering integrated solutions that combine their strengths. This convergence enables a fluid computing continuum that supports dynamic workloads and business models.

“It’s not edge versus cloud—it’s edge with cloud,” remarked one participating CIO, capturing the collaborative spirit of modern enterprise architecture.

The convergence is driven by three pillars:

- **Speed:** The edge ensures minimal latency by processing data locally and reducing reliance on remote data centers.
- **Security and compliance:** Sensitive information processed at the edge can be shielded from exposure while meeting real-time governance mandates.
- **Scalability:** The cloud supports elastic growth, centralized analytics and enterprise-wide integration at global scale.

Use case deep dives

- **Edge in manufacturing:** A Fortune 500 industrial firm implemented edge-based sensors and AI models to detect faults on the assembly line in milliseconds. The result was a significant reduction in unplanned downtime and improved overall equipment effectiveness (OEE). Edge computing is also enabling machine learning (a subset of AI) in the manufacturing industry to automate various functions to speed up assembly lines.
- **Cloud in retail:** A global retail brand deployed a multi-cloud platform to aggregate transactional data across thousands of stores, enabling personalized promotions, efficient stock management and dynamic pricing. This increased customer conversion rates and reduced inventory costs by 15%.



AI/ML workflows: Cloud for training, edge for inference

As AI becomes integral to enterprise decision-making, organizations are adopting a tiered approach to AI deployment:

- Train in the cloud: Using vast compute clusters and distributed data lakes, the cloud is ideal for training complex AI models like large language models (LLMs), computer vision frameworks and neural networks.
- Deploy at the edge: Post-training, compact versions of these models—such as small language models (SLMs) or quantized neural nets—are deployed to edge devices for inference. This enables real-time decision-making in autonomous systems, wearable tech and intelligent surveillance.

Notable applications include:

- Equipment health prediction in industrial environments
- Real-time sentiment analysis in customer interactions
- Behavioral analytics in smart city infrastructure



Strategic takeaways

- Hybrid architecture is the future: Progressive enterprises are building distributed systems that leverage the advantages of edge for immediacy and cloud for depth. This enables them to react quickly at the periphery while maintaining strategic control at the core.
- Combined edge and cloud: Most real-world IoT systems use a hybrid model where edge devices filter and preprocess data. Cloud systems analyze, store and visualize large-scale insights. This balance is essential for performance, cost efficiency and scalability.
- Operational convergence is crucial: Successful digital transformation requires integration across IT and OT domains. This includes synchronized objectives, cross-functional teams and aligned investment priorities to ensure unified outcomes.
- AI readiness requires flexibility: The accelerated growth of AI demands infrastructure that can evolve with the complexity of models, the speed of business change and the variety of deployment environments—from hyperscale data centers to remote IoT endpoints.

Strategic recommendations for technology leaders

1. Align technology with business objectives

- Conduct comprehensive assessments of business goals and operational realities before choosing between edge, cloud or hybrid deployments. Prioritize business value over technology novelty.
- Create value-based roadmaps that link digital capabilities directly to revenue growth, customer experience and operational excellence.

2. Enable cross-functional collaboration

- Develop structured forums and integrated workflows that bring IT and OT professionals together from the start of planning through execution.
- Define shared KPIs and governance models that reflect unified accountability across departmental boundaries.

3. Invest in talent and experimentation

- Commit to continuous workforce development through certifications, internal training programs and rotational cross-training.
- Establish innovation labs or sandbox environments that allow safe experimentation with new architectures, technologies and workflows.

4. Design for agility and resilience

- Architect platforms that are modular, API-driven and interoperable across cloud and edge environments.
- Incorporate disaster recovery, cybersecurity and compliance considerations into every layer of the design, ensuring readiness in a volatile global environment.



Leaders who embrace this convergence, invest in collaborative cultures and architect with adaptability in mind will position their organizations to thrive in a fast-changing, AI-enabled economy.

AT&T and NCR Atleos capabilities in edge and cloud

AT&T capabilities:

- AT&T provides a comprehensive suite of hybrid networking solutions tailored for enterprises seeking to seamlessly integrate edge and cloud. Its robust 5G and fiber backbone enhances low-latency edge deployments, while its multi-cloud partnerships enable flexible and scalable cloud connectivity.
- AT&T's edge computing offerings, delivered through its Multi-Access Edge Computing (MEC) platforms, support latency-sensitive use cases such as connected vehicles, real-time analytics and intelligent manufacturing.
- Through AT&T Cybersecurity, organizations gain access to threat detection, secure network design and compliance tools to safeguard distributed edge and cloud environments.

NCR Atleos capabilities:

- NCR Atleos partners with the leading communications service providers and systems integrators to help them expand their portfolio and extend their global reach.
- NCR Atleos' broad services portfolio and extensive multivendor expertise keep physical, virtual and cloud-based networks running at peak performance.
- Design, deploy, maintain: NCR Atleos ecosystems bring together the best-in-class hardware, software and services to deliver on what customers want, when they want it.

Conclusion: The new operating model

As enterprises move beyond traditional IT paradigms, success hinges on their ability to build intelligent, resilient and hybrid digital ecosystems. This new operating model—powered by edge-cloud synergy and reinforced by AI—supports continuous innovation, data-informed agility and competitive differentiation.

Leaders who embrace this convergence, invest in collaborative cultures and architect with adaptability in mind will position their organizations to thrive in a fast-changing, AI-enabled economy.

About this report

This document was developed based on insights from the roundtable, “Cybersecurity challenges in future enterprise connectivity,” at the AT&T Enterprise Leadership Forum. This report summarizes the discussion and perspectives shared during the roundtable. The views expressed are those of the individual participants and do not represent the official position of AT&T or NCR Atleos.

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