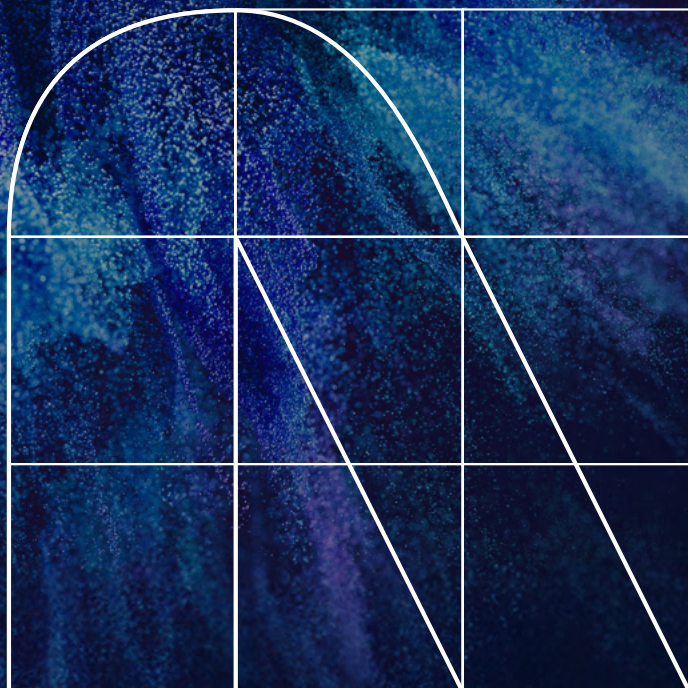


Cloud-led innovation in the era of AI

A guide to cloud modernization
that unlocks the power of agentic AI

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Unlocking innovation at the intersection of AI and the cloud

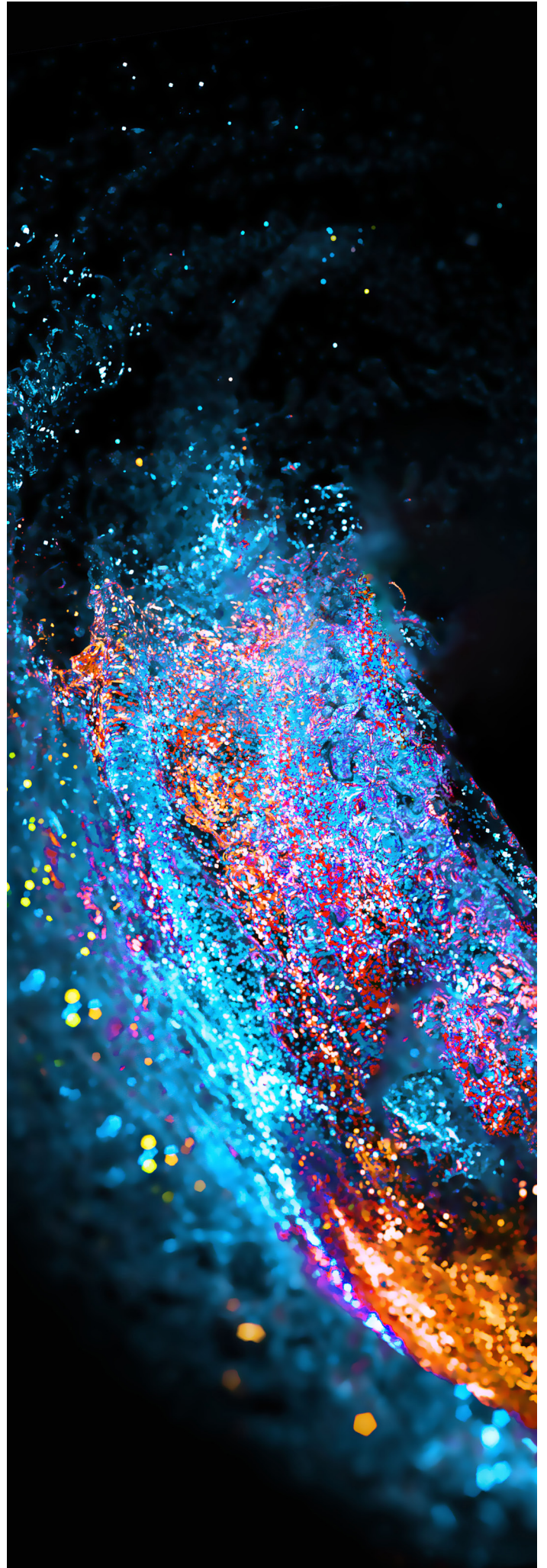
Cloud computing has evolved from a cost-saving infrastructure strategy to a dynamic engine of innovation. Now, as AI — and agentic AI in particular — reshapes how organizations operate, the convergence of cloud and AI marks a new frontier.

This guide explores how this convergence enables organizations to unlock transformative business value.

We examine the next phase of cloud, where AI-powered applications and cloud-native platforms redefine agility, intelligence and customer experience. Then we explore why private and sovereign clouds are becoming essential in the AI era, offering the trust, control and compliance needed to scale responsibly.

Finally, we conclude by highlighting how agentic AI simplifies cloud operations, enabling automation, resilience and innovation — with an emphasis on the critical role of human oversight in guiding responsible transformation.

These insights offer a strategic roadmap for CIOs and business leaders to become truly cloud-evolved while using AI as a catalyst for enterprise reinvention.



The next phase of cloud: Reimagining innovation with AI

Cloud computing has long been the backbone of digital transformation. Initially adopted to meet infrastructure demands and reduce costs, it evolved into a platform for building applications faster through cloud-native architectures. Today, we stand at the threshold of a new era — one where AI and cloud-native data platforms converge to unlock unprecedented innovation. Let's explore what CIOs need to focus on to make sure these platforms are delivering.

The journey of cloud innovation from infrastructure to intelligence has unfolded in three distinct phases:

- **Cost efficiency:** Freed-up resources and budget can be reinvested into new ideas and innovation.
- **Agility:** Allows organizations to experiment rapidly and bring innovations to market sooner.
- **Intelligence:** Elevates innovation by enabling smarter decisions and new capabilities.

This last phase is where the real gains become clear. At NTT DATA, we've experienced this firsthand after embedding AI into our engineering processes, with productivity gains of 30%–40%.

Are you cloud-aware or cloud-evolved?

Most CIOs are very much **cloud-aware**. They recognize it as a priority infrastructure solution, understand the importance of security and threat protection, and analyze cloud workloads and usage to contain costs. But that's no longer enough. The rise of AI — and especially agentic AI, which can act, adapt and learn with minimal human input — demands a shift. The real question is: Are you simply cloud-aware or truly cloud-evolved?

Being **cloud-evolved** means using cloud and AI not just to run operations more efficiently but also to unlock opportunities to innovate. It's about moving from managing resources to creating value by leveraging AI and modernization to invent new business models, speed up time to market and deliver a higher ROI.

Cloud-evolved organizations have their applications, business processes and data platforms on the cloud, which makes it easier to add products and services and positions them to take advantage of the latest AI technologies. They use pre-existing cloud infrastructures and services as building blocks to quickly develop new use cases.

For example, a manufacturer with a cloud-evolved infrastructure can rapidly develop AI-driven product-design processes by integrating cloud-native microservices. These services — such as managed machine-learning platforms, serverless computing and real-time data streaming — allow the manufacturer to train and deploy AI models without having to manage complex infrastructure. Their engineers can now experiment with more design variations, simulate performance under different conditions and shorten the product development cycle — a vast improvement on what was previously possible with a monolithic application architecture.

In this way, by using cloud-native platforms, modernized applications and microservices to embed AI deeply into organizations, CIOs can deliver richer customer experiences, empower employees with intelligent workflows and innovate at a pace that matches market disruption.

What does this look like in real life?

AI has moved far beyond chatbots. For organizations that have modernized applications and embraced cloud-native data platforms, the cloud has become an engine of innovation. They are reimagining entire workflows, launching new products directly in the cloud and reshaping business models in ways that were not possible before. Here are some examples of how the combination of cloud and AI is fueling real-world innovation:

- A **Aian airline** replaced their legacy chatbot with a virtual concierge powered by agentic AI — a 24x7 travel buddy that handles complex inquiries and itinerary planning. This transformation, incorporating Google Gemini and Google Agentspace, has streamlined customer issue resolution, boosted loyalty and increased sales.
- In Chile, the global personal care company **L'Oréal** launched a GenAI-powered beauty consultant embedded in WhatsApp and Instagram. Built on Microsoft Azure OpenAI, it delivers hyperpersonalized product recommendations to turn everyday social platforms into powerful ecommerce engines. The result? Improved customer data collection, deeper personalization and accelerated conversions.
- In India, **HDFC ERGO General Insurance Company**, a multinational insurance provider, set a mandate to foster innovation and accelerate transformation through AI and a digital-first mindset. To expand their customer base and improve customer engagement, they modernized and migrated their on-premises applications to the cloud, paving the way for them to emerge as a leader in AI-driven innovation and digital transformation.

Agentic AI has changed the game

Agentic AI is bringing “systems of action” to the forefront. Instead of just following preset rules, these systems make dynamic, context-aware decisions in real time. And when the AI agents are also industry-specialized, they can both execute and evolve generic workflows.

4 key dimensions of agentic AI that stand out and drive cloud innovation:

- 01 Agentic AI for business applications:** Integrating AI and agentic AI into business systems — enterprise resource planning, customer relationship management, supply chain and more — enables predictive insights, automation and decision-making support. From demand forecasting to intelligent customer support, AI and AI agents enrich business processes with intelligence and speed.
- 02 Agentic AI for customer engagement:** This is a new frontier. Autonomous agents can learn, reason and act on behalf of customers or employees. Imagine service bots that don’t just resolve issues but anticipate needs, or procurement agents that autonomously negotiate contracts, creating new ways to innovate customer and partner relationships.
- 03 Agentic AI for IT process automation:** With agentic AI, systems can autonomously manage and optimize enterprise IT operations in real time. By reducing manual effort and making your operations more resilient, it frees your IT team to focus on higher-value work instead of routine firefighting.
- 04 Agentic AI for software engineering:** Here, technology accelerates development by autonomously generating, testing and refining code. Developer teams can build more reliable software through continuous innovation and faster delivery of new capabilities.

The value you gain is immense: customer satisfaction soars because of hyperpersonalized engagement; operational efficiency benefits from the automation of complex, multistep workflows; and innovation happens faster than before as AI agents streamline experimentation and feedback loops. Now, CIOs can elevate IT from a service center to a strategic driver of innovation.

Instead of “build once, use everywhere” for static use cases, we’re entering the “build once, evolve everywhere” era for industry-specific AI systems, where business processes adapt to new regulations, customer demands and market shifts automatically, without months of development.

Cloud and AI in action: Customer support for a low-cost airline

Business need: A leading Asian low-cost airline wanted to make their customer-support ecosystem more efficient. They were operating a static, rule-based chatbot that could not scale to meet the demands of the growing user base. The objective was to replace it with a next-generation, human-like virtual concierge capable of delivering real-time support, reducing reliance on live agents and improving user engagement across more than three million monthly conversations.

The solution: Niveus Solutions, part of NTT DATA, developed and delivered an agentic AI-powered virtual travel concierge built on the Gemini for Google Cloud platform. It operates at scale, automates key customer workflows and provides native language support in more than seven languages. The concierge also includes advanced features such as voice transcription, sentiment analysis and seamless transitions to live agents when necessary.

Outcomes: Using the virtual concierge has resulted in a 10% reduction in live-agent call volume through workflow automation, with 80% response accuracy in multiple languages, improving the airline’s regional accessibility, and a 70% success rate in generating actionable responses, which increases customer satisfaction.

How to become a cloud-evolved organization

Migrate: Take the first step to innovation

Migrating workloads to a cloud-native environment is the catalyst for innovation. It reduces legacy constraints, accelerates application development cycles and enables business applications and processes to evolve in sync with market changes. This transforms the cloud from an IT platform into an engine of business innovation.

Modernize: Build cloud-native engines to power innovation

Modernization turns migration into measurable business impact. By refactoring applications, adopting microservices and using cloud-native platforms, you can create modern applications and processes that are intelligent, adaptive and built to scale. Modernization embeds AI into the heart of your operations, resulting in faster product development, smarter workflows and continuous delivery. The result: Your organization runs more efficiently and stays ahead of disruptions through ongoing innovation.

Establish strong data-governance practices

Cloud-native platforms provide the foundation for AI, but it's data governance that determines whether innovation succeeds or stalls. Without trusted, well-managed data, even the most advanced AI models will fail to deliver impact. By using the cloud to unify data, enforce governance and streamline workflows across environments, you gain both efficiency and resilience. The payoff is reduced risk and the ability to innovate fast and confidently at scale.

Achieve “always on” efficiency, reliability and top performance

To keep critical business services resilient under pressure, embrace site reliability engineering (SRE) alongside AIOps and agentic systems that automate reliability, scalability and recovery. In this way, you gain observability as well as the ability to proactively detect and autonomously resolve issues. Service delivery is faster without sacrificing quality, compliance and security.

Upskill your workforce

Cloud architects, developers and data engineers must understand and master the capabilities of AI frameworks, AIOps practices and the design of AI-native applications. Equally, business leaders need to understand AI's capabilities before they can envision the fusion of AI with high-value use cases. Finally, to accelerate the design of AI solutions, create cross-functional teams that blend IT expertise, business expertise and domain knowledge.



Advice for CIOs: Take the strategic lead

For CIOs, the journey from cloud-aware to cloud-evolved is a strategic mind shift that brings innovation to the forefront. Cloud migration lays the foundation; application modernization unlocks agility; AI and agentic AI create new possibilities; skill-building empowers people; and the combination of microservices and accelerators drives speed.

But the true mandate is bigger: To transform cloud from an IT platform into a business innovation engine, including through rearchitecting to take advantage of the benefits of private and sovereign cloud, as we set out in the next section. The CIO's leadership turns these capabilities into competitive advantage — reshaping customer experiences, reinventing business models and driving growth.

The organizations that succeed will be those that innovate continuously, with CIOs leading the way as strategic visionaries who will define what comes next.



Rearchitecting for the future: Why private and sovereign clouds lead in the AI era

Among CIOs across industries, one theme consistently rises to the surface: Trust is now the true differentiator. Cloud and agentic AI are inseparable, but success no longer depends just on speed or scale. It depends on whether stakeholders — customers, business leaders and boards — trust how you manage data, govern AI agents and safeguard operations.

It's why more CIOs are turning to private and sovereign clouds as the foundation of their architectures. Private clouds deliver the control and customization needed to handle sensitive workloads with confidence. Sovereign clouds add the compliance and data residency assurances that leadership teams increasingly expect. Together, they form the trust layer without which agentic AI cannot thrive.

Still, private and sovereign clouds alone aren't enough. They don't provide the elasticity, global reach or innovation velocity that today's organizations demand. The conversation is therefore shifting: It's no longer about choosing a single model, but about rearchitecting with intent — aligning your cloud strategy to simultaneously enable growth, ensure compliance, support AI-driven initiatives and accelerate innovation.



The roles of private, sovereign and public cloud

In organizations such as government agencies and financial institutions, there is a great emphasis on compliance. Sovereign clouds guarantee that data stays within regional or national boundaries, in alignment with laws like the European Union's General Data Protection Regulation, the EU AI Act and the US Health Insurance Portability and Accountability Act. And beyond regulation, sovereign clouds send a message of trust — to regulators, customers and even citizens. For organizations that operate under intense scrutiny, sovereign is becoming nonnegotiable.

In industries such as healthcare, finance and defense, CIOs lean on private cloud because it gives them authority over governance and cost. They can tightly manage how their data is stored and accessed, so that workloads meet both internal policies and external regulations. For highly regulated industries, private cloud isn't a "nice to have." It's essential.

And yet, every CIO acknowledges the vital role of public cloud. It's where innovation happens. Public platforms bring elasticity along with rich, cloud-native services and the ability to modernize applications at speed. It's where we train large agentic AI models, experiment with new ideas and scale successes across organizations.

In many ways, public clouds are the proving ground where new possibilities are tested, validated and accelerated.

Cloud and AI in action: Transforming healthcare experiences for millions of patients

Business need: A US healthcare IT company needed a strategic partner to execute a full IT estate transformation to help them manage sprawl, costs and integration complexities resulting from acquisitions, and to align their IT outcomes more closely with modern patient care.

The solution: NTT DATA implemented a future-ready multicloud platform and technology ecosystem to support secure, high-performance business applications, with managed services for private cloud, Amazon Web Services and Microsoft Azure along with site reliability engineering and mainframe modernization services. We also reduced complexity and optimized costs through data center consolidation and the creation of predictable spending models with service-based consumption.

Outcomes: With their modernized technology stack, the company is set to realize 40% cost savings and a 25% reduction in their technology landscape, compared with their baseline. They are also benefiting from predictable cost visibility, flexible consumption models and faster adoption of cloud-native services, which is helping them add product features that open up new revenue streams.

Rearchitecting with intent

The lesson is simple: It's not about one model versus another. The CIOs who make the most progress are those who rearchitect with intent. They're deliberately matching workloads to the cloud environments that make the most sense — private for control, sovereign for compliance, public for agility.

Rather than a technology play, this is a leadership approach. It means sitting down with your peers across the C-suite and asking: What are our business imperatives? What risks do we need to mitigate? Where do we need to innovate faster? Then, you reimagine your cloud architecture so it supports those priorities.

When done well, it creates a modern, flexible ecosystem where governance, observability and data management connect everything seamlessly.



Data management and modern architectures: The backbone of AI

To succeed with AI, you need good data management. If you get data right, you build a solid foundation that enables you to innovate confidently.

And when private clouds form part of a hybrid, adaptive cloud ecosystem, you gain flexibility, security and performance because of the seamless integration of private, edge and containerized solutions through a single, fully managed platform.

This means you can:

- Integrate and unify data across private, sovereign and public clouds
- Guarantee data lineage and traceability (tracking the origin, transformation and movement of data throughout its lifecycle) to satisfy audit and compliance needs
- Enforce data governance and privacy consistently, no matter the jurisdiction
- Maintain performance, accuracy and relevance so agentic AI models deliver meaningful results

Governance as a built-in guardrail

What is encouraging is that governance is no longer an afterthought. Hyperscalers are embedding governance into their platforms, from Microsoft Azure's Responsible AI dashboards to Google's Dataplex governance and Amazon SageMaker Clarify.

This means CIOs can stop treating governance as a constraint and start using it as a strategic guardrail. Governance ensures fairness, transparency and auditability — even when workloads span borders and environments.

Advice for CIOs: A new imperative in the era of agentic AI

Private and sovereign clouds give us the foundation of trust. Public clouds provide the scale and agility. But the CIO's mandate is to bring them together — to rearchitect with intent and build an environment that is flexible, compliant and future-ready.

We need architectures that allow agentic AI to thrive responsibly while positioning organizations to grow and innovate, and the CIOs who succeed won't choose one model over another. Rather, they'll be the ones who collaborate across the business, rethink their ecosystems and align their cloud strategies with today's imperatives and tomorrow's opportunities.

That is what it means to lead in the agentic AI era.

How agentic AI transforms cloud — with humans at the helm

Ten years ago, cloud moved from a promising concept to a proven business enabler. For CIOs, it delivered three critical advantages: speed to market, the ability to scale operations on demand and the ability to keep services running reliably. These capabilities reshaped how they invested in technology, transforming IT from a cost center into a driver of growth and innovation.

Fast forward to today, and a new wave is crashing in: AI. But not just AI in theory: Practical, agentic AI-driven automation is taking routine tasks off our plates, applying intelligence to spot risks before they escalate and giving teams back the time to focus on real growth.

Far from just another passing technology trend, the convergence of AI and cloud is the disruption that redefines the digital era. Cloud gave organizations speed, scale, and resilience; AI adds intelligence, automation and adaptability. Together, they form a platform that streamlines operations, fuels innovation, accelerates decision-making and opens doors to opportunities we've only begun to imagine.

These intelligent agents act as tireless digital teammates. Even the most complex cloud migration projects can now benefit from AI-powered discovery, with trained models and analytics delivering critical insights on your environment. Your teams reach their targets faster and with less effort because of these extensive AI-powered and AI-automated capabilities.

This is the start of a new chapter for CIOs, where the cloud becomes less of a utility and more of a growth engine — with humans firmly in the driver's seat.



5 areas where agentic AI is changing cloud management

What happens when AI agents work alongside clouds? You realize valuable business outcomes — faster delivery, lower cost, stronger customer loyalty and compliance built into daily operations:

1. Cloud platforms

Agentic AI makes it simpler to connect your technology stack across clouds, networks, data centers and more, with AI agents driving efficiencies in workflows, protecting and governing your data, and spotting and resolving issues before they happen.

2. Cloud migration

AI speeds up and simplifies cloud migration. GenAI can extract data from existing environments and automatically reconstruct it within your hyperscaler of choice.

3. Operational support

Agentic AI can power intelligent agents that provide Tier 1 and Tier 2 services for applications, architectures and infrastructure hosted in the cloud. These agents deliver omnichannel support to provide rapid, automated assistance.

4. User experience

Once workloads are in a cloud-native environment, a service provider can deploy and simulate agents directly within the cloud setup, fine-tune them and export them for an organization's full use. Just as the service provider monitors application performance, they can monitor and manage these AI agents to keep them working optimally.

Cloud-native development — powered by AIOps, microservices and accelerators — also allows teams to build and release applications with unprecedented speed. The real breakthrough lies in how this approach empowers developers to iterate continuously — testing new features, rolling out improvements and refining user journeys in near real time.

AI agents add another dimension, observing user behavior and system performance to guide smart decisions and enhancements. The result is a cycle of constant innovation: applications that evolve seamlessly with changing customer needs and deliver personalization, speed and reliability at scale.

5. Multicloud environments

Standardized agentic AI protocols support secure, cross-platform communication between agents. This makes it possible to design multiagent workflows that span different clouds — an agent in Azure can collaborate seamlessly with one that's accessing a dataset in Google Cloud Platform. In a supply chain scenario, this could enable real-time coordination between procurement, logistics and inventory agents across different cloud providers.

Cloud and AI in action: AI-powered IT service management for a major manufacturer

Business need: A large US product manufacturer, marketer and distributor wanted to cut costs significantly while minimizing staff reductions and improving their AI and automation capabilities. Their IT service management (ITSM) spending was identified as a primary target in achieving their savings goals.

The solution: To shift the manufacturer to a more agile, AI-driven framework, NTT DATA proposed a two-phase delivery model. First, we replaced core routing and triage capabilities with low-code agentic AI that would gather data to be routed to agents for fulfillment. Then, phase two involved a full replacement of ITSM capabilities, introducing progressive automation, escalation management, continuous learning and improved operational support for several AI agents.

Outcomes: The client's reduced ITSM spending is projected to save them \$3 million a year, with additional savings expected as AI adoption expands across the rest of the business.

The importance of human oversight

Agentic AI won't replace your teams. It will elevate them — and with humans at the helm, the convergence of AI and cloud can enable true business transformation.

The future of cloud management will be a collaborative model involving both humans and AI agents. Already, generalist agents assist employees with day-to-day tasks such as data retrieval, report generation and workflow coordination, while specialized agents focus on cloud optimization, networking, security and compliance. Over time, these agents will become even more personalized and context-aware — but their greatest value will emerge when paired with skilled human control.

While agentic AI can handle well-defined tasks with remarkable speed and accuracy, the cloud is a complex, dynamic environment where variables change constantly and unexpected dependencies can appear. Human-in-the-loop oversight is the guardrail that builds trust.

In practice, this means AI agents can recommend actions, but a human cloud engineer, security analyst or site reliability engineer can review and approve changes before they are executed in production. This approach also allows for critical context to be provided, including organizational priorities, regulatory nuances or new business requirements.

And when AI decisions are transparent, auditable and aligned with enterprise priorities, CIOs instill confidence in boards, regulators and stakeholders.

The CIO as strategist

As this convergence takes shape, the role of the CIO is also evolving. Instead of just managing technology, you're orchestrating business transformation.

AI agents free your teams to innovate, compliance becomes more proactive, and resilience is built into the way the business operates.

But accessing the full potential of AI and cloud requires collaboration. Work with other C-level leaders, business units and managed service providers with full-stack expertise to align these capabilities with what matters most: growth, efficiency and customer trust.

NTT DATA's Smart AI Agent™ Ecosystem draws on our full-stack value proposition to address this transformation comprehensively — through strategic consulting, implementation and system integration, industry-specific use cases, proprietary agent orchestration platforms, managed operations and private AI capabilities.

Advice for CIOs: A different focus for the AI era

Still, technology is just one side of the equation. To unlock AI's full potential in the cloud, CIOs must ensure their organizations are developing the right skills both within their IT teams and in several other key areas, including:

- **Data quality:** AI relies on unified, clean and trusted data. Robust data governance, proper labeling and regular quality checks are fundamental.
- **Compliance:** Any automation in a cloud environment must meet strict compliance requirements, especially in industries such as finance, healthcare or government. Make compliance teams part of the full deployment lifecycle, from design to continuous monitoring.
- **Ethical and governance considerations:** Consider broader ethical concerns about transparency, fairness and accountability in AI decision-making. In the cloud context, AI agents that learn from skewed historical data may inadvertently make biased decisions, such as prioritizing certain workloads or users. Set out clear ethical and governance guidelines for AI use in your organization.
- **Financial discipline:** FinOps practices create transparency and give you control over consumption.

Simply put, the value of AI and cloud must be pursued together. Cloud provides the foundation, while AI extends its value. Combined, they enable responsible and sustainable transformation.

Leading in the AI era: A strategic mandate for cloud-evolved enterprises

The convergence of cloud and AI marks a notable shift in enterprise strategy. By embracing cloud-native platforms, modern architectures and agentic AI, organizations can innovate faster, streamline operations and deliver richer customer experiences.

While private and sovereign clouds provide the trust and governance required for responsible AI adoption, public clouds remain vital engines of experimentation and scale.

CIOs must therefore rearchitect with intent — aligning workloads with the environments that best support their business priorities while delivering compliance and agility. At the same time, AI simplifies cloud operations, enabling autonomous systems to manage complexity while humans guide strategy and oversight. This balance ensures transparency, trust and alignment with enterprise values.

To unlock the full potential of AI in the cloud, organizations must invest in talent, governance and data discipline. The CIO's role is evolving — from managing infrastructure to orchestrating transformation — and those who lead with vision will position their enterprises to thrive in the AI era.

Read more about NTT DATA's Cloud services and Agentic AI Services for Hyperscaler AI Technologies to see how we can advance your organization to a new way of doing business.

→ [NTT DATA's Cloud services](#)

→ [Agentic AI Services for Hyperscaler AI Technologies](#)

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