NTT DATA | Google Cloud

# Modernization 2.0: How agentic AI is changing the game

Google Cloud's autonomous agentic AI platform is redefining how organizations approach their modernization initiatives

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# The next wave of modernization is here

Over the last decade, organizations have poured tremendous energy and investment into modernization. They've migrated workloads to the cloud, built unified data platforms and adopted digital-first ways of working.

This first wave brought scalable, cloud-native infrastructure and real-time data, cutting costs by as much as 50%–80%, according to Mordor Intelligence.[1]

Now, with the rise of AI, and especially agentic AI, we've entered a new chapter. Cloud-native modernization — reconfiguring legacy systems into microservices — is no longer the end goal. Rather, it's a step toward building intelligent platforms that support agentic workflows.

Google Cloud is an excellent choice for this next wave of modernization, with leading-edge AI and data analytics services (such as BigQuery and Vertex AI) that enable innovation and smarter decision-making. Its globally distributed, secure and highly scalable infrastructure provides an ideal foundation for migrating and running modern applications (with technologies like Kubernetes Engine and serverless platforms), helping organizations to lower operational costs and speed up time to market.

[1] Mordor Intelligence. Application Modernization Market Size & Share Analysis – Growth Trends & Forecasts (2025–2030). 16 June 2025.

# Rethinking core modernization priorities

With agentic AI, applications become adaptive ecosystems. A human resources application might automatically adjust workflows for different employee personas, or a banking application interface might change based on whether a customer is checking their balance, applying for a loan or traveling abroad. Applications stop being one-size-fits-all solutions and start being contextual companions.

Organizations in every industry recognize the potential of AI in reinventing the way they operate and interact with their customers and employees. They are also under pressure to act quickly. However, there are three main challenges to overcome before they can start deploying agentic AI — or any AI — at scale:

- **The foundational challenge:** Managing a large legacy footprint
- **The philosophical challenge:** Reimagining the role of AI
- **The operational challenge:** Demonstrating real value

Addressing these challenges changes how organizations think about modernization, going beyond the technology stack to also focus on business processes and the value chain.

Yet, many organizations struggle to capitalize on the hype around agentic AI. Proofs of concept are showing promise, but scaling into production exposes underlying weaknesses such as poor data readiness and fragmented processes that can only be addressed by a sound, AI-enabled modernization strategy.

Let’s explore each of these challenges more comprehensively.

# The foundational challenge: Managing a large legacy footprint

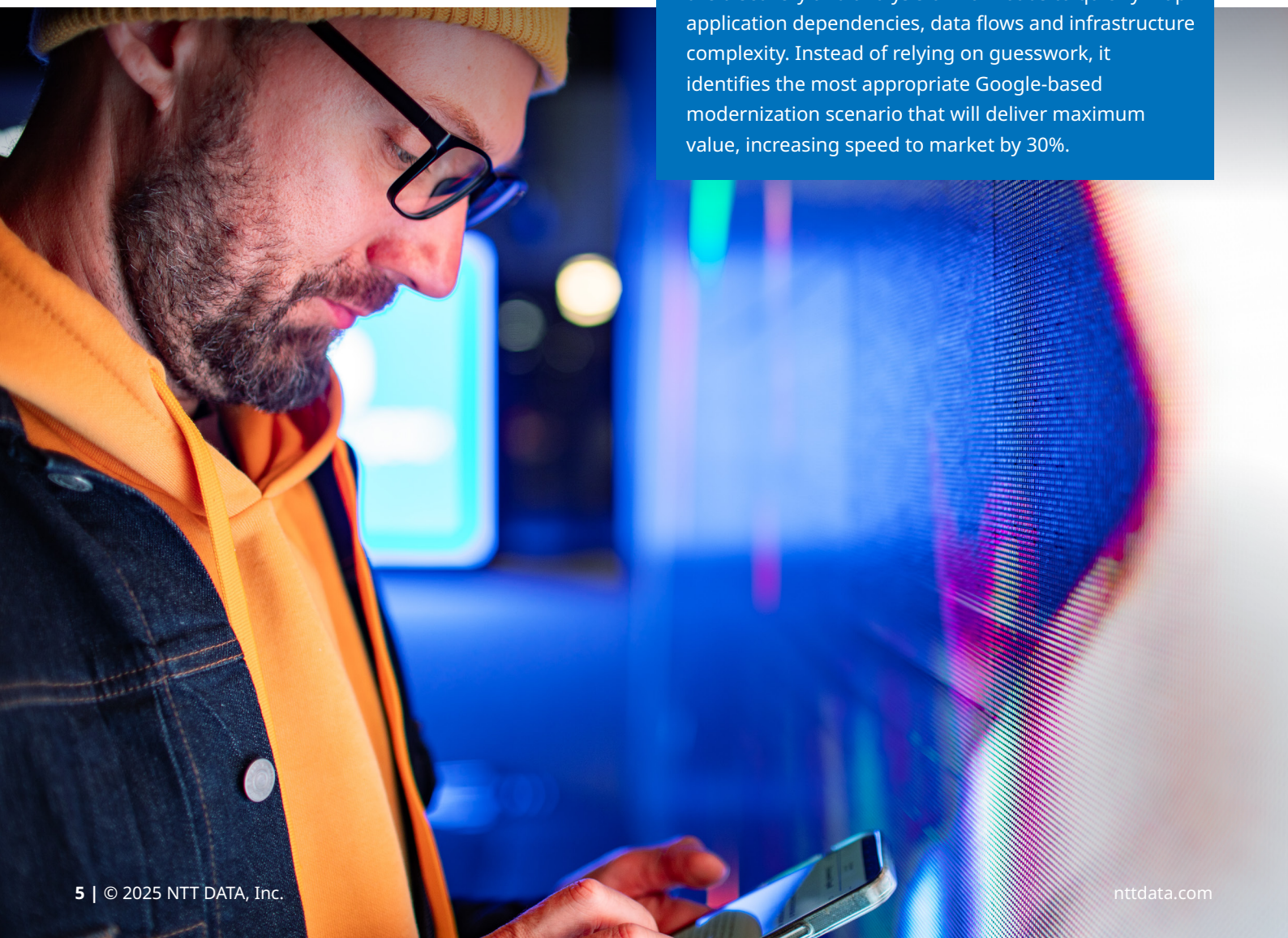
You can't expect transformative results by layering agentic AI over outdated systems. Many organizations still carry a heavy legacy footprint and significant technology debt across their infrastructure, applications and data. Without a modern, cloud-native foundation, whether public or sovereign, they're unable to realize the full potential of agentic AI: Accelerating innovation, rethinking workflows and engaging their customers in new ways.

For agentic AI to deliver on its promise, you need a robust enough enterprise IT foundation. For organizations with a legacy estate, the first step is to migrate workloads to a cloud-native environment that offers scalability, elasticity, continuous integration, microservices and data accessibility.

A discovery and assessment process can determine the fastest route to realizing immediate agentic AI value. And, because AI also speeds up the modernization process itself, this doesn't have to take a long time. For example, NTT DATA modernized a Canada-based retailer's legacy drug sales application by refactoring batch processes and migrating them to Google Cloud. The solution used DevSecOps, automated testing and GenAI-driven refactoring to reduce technical debt, strengthen security and lower cloud operations costs while ensuring full compliance and integration across systems.

**A factory for cloud transformation success**

NTT DATA's cloud transformation factory automates the discovery and analysis of workloads to quickly map application dependencies, data flows and infrastructure complexity. Instead of relying on guesswork, it identifies the most appropriate Google-based modernization scenario that will deliver maximum value, increasing speed to market by 30%.



# Bridging cloud and AI

For many organizations running legacy systems like SAP or Oracle, a “cloud-to-AI bridge” is a more realistic option to connect their existing infrastructure to modern AI capabilities without fully migrating to platforms such as SAP Rise or Oracle Cloud.

By moving workloads to Google Cloud and using Gemini as a service, organizations can infuse AI directly into data pipelines, data lakes and applications. This enables them to build agentic AI use cases across business processes, even while their core systems remain largely unchanged. In doing so, they can evaluate whether to invest in moving fully to SAP Rise or Oracle Cloud or whether to use “as a service” offerings that may offer the same benefits more flexibly and cost-effectively.

**Paving the way for agentic AI at a global retailer**

We deployed NTT DATA’s AI-powered cloud transformation factory for a global retailer with more than 12,000 stores. To maintain their leading position, they wanted to match the levels of speed, agility and cost flexibility of their cloud-native retail competitors. After replatforming over 500 workloads on Google Cloud, we helped them reduce their total cost of ownership and improve their store and warehouse performance by almost 30%. The migration from data centers to the cloud was completed in record time, with AI analyzing their existing footprint and automating the replatforming and rehosting process through Google-native technologies. Now, the retailer can deliver seamless, more connected experiences for their customers.

# The philosophical challenge: Reimagining the role of AI

Agentic AI is not just another tool for automating IT processes or delivering incremental optimizations and improvements. It has the power to revolutionize business processes and value chains, streamline business and IT workflows, and replace costly systems and platforms.

Organizations have long invested in data lakes and analytics dashboards. Agentic AI takes these static resources and turns them into dynamic decision engines by adding intelligence that can visualize and refine business processes, spot repetitive tasks and adapt in real time. In doing so, these agents become integral to how businesses operate, working alongside human teams for greater effectiveness and productivity.

Here's what this could look like in an organization:

- **A customer-service AI agent** answers questions but also anticipates needs, connects channels (chat, voice, application and more) and learns customer preferences over time.
- **A logistics AI agent** alerts employees when a shipment is delayed but also automatically reroutes the cargo, negotiates priority with carriers and informs the customer — even before anyone asks.
- **An agentic AI analyst** adds value to sales reports by identifying root causes, suggesting corrective actions and even executing certain steps, such as adjusting spending on digital advertising in a region where sales are down.
- **A maintenance AI agent** monitors thousands of IoT signals across the organization's facilities to predict equipment failure, order spare parts, schedule technician visits and reroute production to other lines to minimize disruption.

To reimagine the value chain for the long term, agents must work in harmony with cloud-native technologies like serverless functions and microservices. When agents are added to the mix, these microservices can be orchestrated more intelligently to deliver business applications efficiently and with less complexity.

# Speed is of the essence

Agentic AI also speeds up modernization. By using industry cloud platforms equipped with built-in accelerators and ready-to-use sets of agents, serverless functions and microservices, your teams can launch minimum viable products in under three months. These tools also offer instant visibility into operations and make it easy to keep adopting new methods and approaches.

**Ready-made for cloud efficiency**

NTT DATA's Industry Cloud Platform provides a prebuilt set of agents, serverless functions and microservices that get you to the cloud quickly, smoothly and cost-effectively.

Importantly, transformation driven by agentic AI isn't limited to the cloud. Many processes don't exist only in the cloud or in a data center; they are also found in physical spaces such as retail stores, manufacturing plants or oil rigs.

To truly rethink these end-to-end processes with agentic AI, you need intelligence capabilities at the edge, in the cloud and everywhere in between. With Google Distributed Cloud, you can deploy AI at the edge through Google's connected cloud capabilities, and even in secure, standalone environments like oil rigs, where direct cloud access isn't possible.

**Transforming marketing operations for a global organization**

Using AI for Marketing on Google Cloud, brands can unify data, predict customer intent and deliver personalized engagement at scale. It accelerates campaign performance through GenAI-driven insights, automation and real-time, cross-channel optimization.

NTT DATA built a GenAI for Marketing platform on a scalable microservices architecture to help a global conglomerate reimagine their marketing operations. Teams use this platform to generate campaign briefs, social media posts, tailored graphics and bulk emails within minutes, fully aligned with brand guidelines.

The integration of Google Gemini, for text generation, and Google Imagen 3, for creative assets, makes it possible for marketers to create hyperpersonalized campaigns across brands and channels, review them centrally and activate them instantly. The result: An 85% cut in turnaround time, 50% less manual effort, richer audience insights and faster trend discovery, turning marketing into an intelligent, adaptive function.

# The operational challenge: Demonstrating real value

A key challenge with agentic AI is defining clear, measurable outcomes. Many organizations struggle to scale with agentic AI because they don't move beyond pilot projects and are unsure what success looks like or what to expect from a full-scale deployment.

Without a clear understanding of the potential ROI or business impact, it's hard to build a compelling case for further investment and adoption, even for something as simple as automating password resets with agentic AI.

Whereas simple automation can be easily measured, determining the impact of agentic AI is more complex. A customer-service AI agent should have key performance indicators (KPIs) just like a human member of the same team, and agentic AI should have SLAs tied to business value.

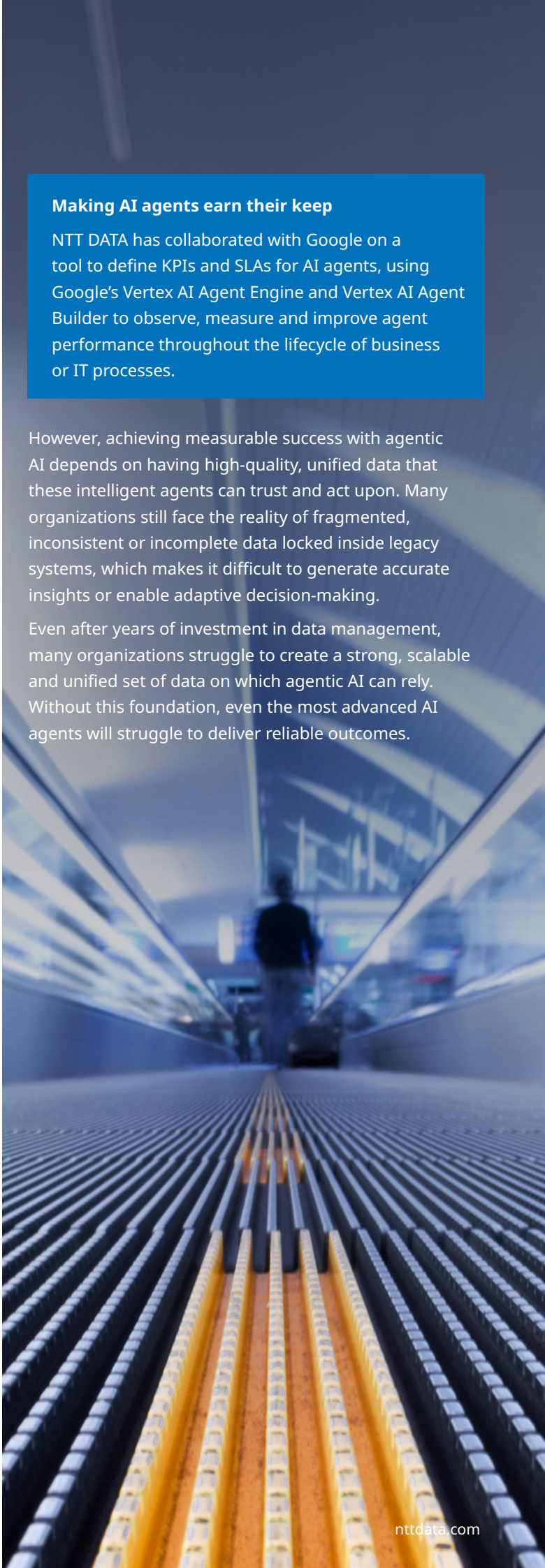
When we applied agentic AI to traditional IT processes at NTT DATA and monitored the agents in this way, ticket volume came down by 65%, translating to real business value in the form of renewed investment in innovation initiatives and human employees spending more time on strategic tasks. Just like microservices are optimized in a traditional model, underperforming AI agents can be identified and adjusted for efficiency.

**Making AI agents earn their keep**

NTT DATA has collaborated with Google on a tool to define KPIs and SLAs for AI agents, using Google's Vertex AI Agent Engine and Vertex AI Agent Builder to observe, measure and improve agent performance throughout the lifecycle of business or IT processes.

However, achieving measurable success with agentic AI depends on having high-quality, unified data that these intelligent agents can trust and act upon. Many organizations still face the reality of fragmented, inconsistent or incomplete data locked inside legacy systems, which makes it difficult to generate accurate insights or enable adaptive decision-making.

Even after years of investment in data management, many organizations struggle to create a strong, scalable and unified set of data on which agentic AI can rely. Without this foundation, even the most advanced AI agents will struggle to deliver reliable outcomes.



# An ongoing need for vigilance

Measurement isn't a one-and-done process. Because AI agents evolve to become more intelligent over time, their performance has to be monitored and refined continuously. This is where Google's technology plays a key role.

Google's Vertex AI Agent Engine and Vertex AI Agent Builder can be used to monitor, measure and improve AI agents' performance through a continuous feedback loop. If there's a degradation in an agent's performance or it's not achieving the expected outcomes, these tools help your team refine and improve the agent's effectiveness. You have visibility and control over every deployed agent.

**Boosting business metrics at an Asian airline**

An Asian airline set a clear target with agentic AI — and achieved it. They replaced their legacy chatbot with a virtual concierge, powered by agentic AI, to handle complex inquiries and itinerary planning. This 24x7 travel buddy, incorporating Gemini Enterprise Platform, has streamlined customer issue resolution, improved customer loyalty and increased sales. It serves about 3 million users per month and has helped reduce call volume by 10%, demonstrating tangible ROI.

# Make an agentic AI future a reality

Agentic AI is a catalyst for reimagining modernization and how you do business. While it's a new approach with some complexity, it also creates new opportunities for organizations that get it right.

NTT DATA and Google Cloud are already working together to help a range of industries, from retail to banking, move beyond proofs of concept to see real value through agentic AI within three months.

Together, our unique full-stack capability delivers innovative solutions at scale. Google Cloud provides a robust foundation — scalable infrastructure, leading-edge AI models and security-first design — and NTT DATA translates these capabilities into practical, industry-specific solutions.

Google Cloud's portfolio ranges from AI infrastructure to AI platforms that deliver digital sovereignty and industry value-chain transformation, while NTT DATA's capabilities include data centers, networks, applications, data, security and industry solutions.

Accelerators like our cloud transformation factory use AI to migrate you to the cloud, and our Industry Cloud Platform helps you reimagine business processes with prebuilt tools and assets.

Read more about NTT DATA's agentic AI services to see how we can accelerate your business outcomes.

**→ Read more about NTT DATA's agentic AI services**

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