

Executive guide

What's the big deal with GenAI agents?

Rapidly evolving agent technology promises a new level of efficiency, value and competitive advantage from generative AI



Content

04 **Delivering transformative business value**

06 **Benefits and applications of GenAI agents**

07 **New technology brings new challenges**

10 **Riding the agent wave**

11 **Partner with NTT DATA**

About this guide:

This guide will help ensure your organization’s readiness to design, deploy and manage GenAI agentic systems that deliver transformative impact. We’ll explore the rise of GenAI agents and how they have the potential to deliver a higher order of business value. We’ll also discuss why these systems are so efficient and effective. We’ll help you understand the unique opportunities and challenges that GenAI agents present. And finally, we’ll provide mitigation tips for potential obstacles to successful deployment and management.



Delivering transformative business value

We're at a point in the generative AI (GenAI) hype cycle where questions about enterprise viability and return on investment are at the forefront. The frenzied activity of the last 18 months — ideation sessions, proofs of concept (POCs), roadmapping and so on — is giving way to some palpable doubt and frustration. IT and business leaders, and the boards to which they are beholden, are wondering whether GenAI will deliver transformative business value.

It's a common pattern in the history of technology innovations — from the PC to the internet to the cloud. Each of these breakthroughs experienced dips and doubts during its evolution. GenAI will be no different. What is different about GenAI is the speed at which innovation is taking place and the scope of its transformative impact.

This means the first wave of doubt will likely be a short one, and what lies beyond it — the rapid rise of agents — will make the promised impact of GenAI increasingly tangible.

What are GenAI agents?

Simply put, agents can act on a user's behalf.

Most of the GenAI POCs and solutions we've seen to date focus on retrieving knowledge from unstructured data. They use a retrieval-augmented generation (RAG) structure and are highly effective at delivering quick, accurate answers. But their value tends to end there.

How are GenAI agents different from traditional approaches?

Agents make traditional large language model (LLM) approaches more useable and valuable. They execute specific tasks within a workflow instead of point-to-point communication between the LLM and the user. It's the difference between being told what to do and doing it.

It's the getting-things-done element of agents that will enable organizations to double down on productivity and move up the value-creation ladder.

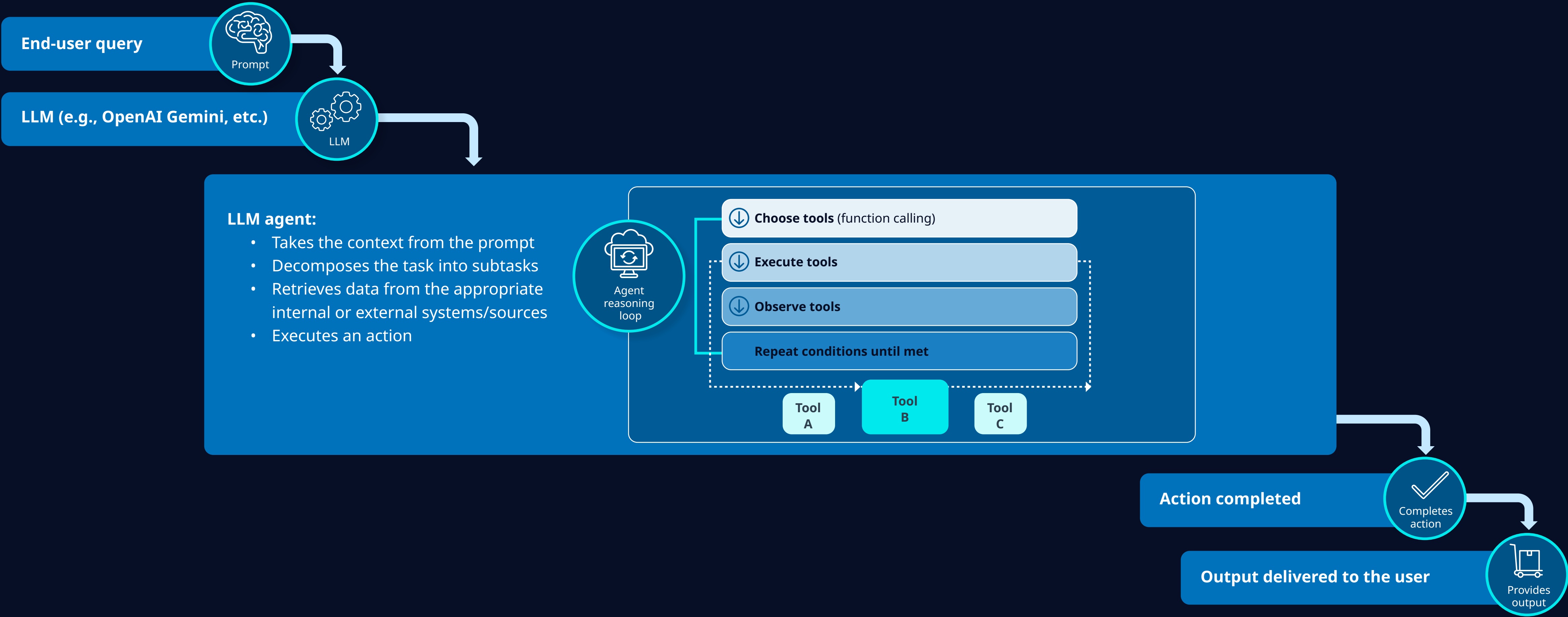
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Wendy Collins

Chief AI Officer, NTT DATA, America

How agents work – LLM and agent flow



Benefits and applications of GenAI agents

Here are some of the specific capabilities that agentic solutions bring to the table — and make them more likely to deliver greater business value.

- 1. Autonomous task completion and problem-solving.** By integrating various tools, agents can execute tasks — such as application programming interface (API) calls, data entry, emails and calculations — that require constant monitoring or rapid-fire decision-making with minimal human intervention. When AI agents use machine learning (ML) capabilities with goal-oriented behavior, they can take on complex challenges in new and efficient ways.
- 2. Adaptable, real-time capabilities.** Agents can pull data from internal systems or external sources (like online searches or APIs) to capture more up-to-date information. Plus, they can adapt how they complete tasks based on changing environments or new information. This means agents perform more effectively in dynamic situations.
- 3. Improved interaction quality.** Agents can perform tasks in a stepwise approach to follow a logical chain (train of thought) that improves the precision of a response. This makes it easier for organizations to engage with and guide the actions these systems take.
- 4. Operation at scale.** One of the biggest challenges we've seen with early GenAI and RAG-based POCs — even successful ones — is scalability. Once trained, an agentic system can be deployed quickly. A multi-agent approach can enable the automation of several workflow processes at scale, with each agent having a single responsibility.



New technology brings new challenges

Agentic systems have a long and high-value list of capabilities, but they're not without challenges. Here are five key issues and how you can minimize them as you design and deploy these systems in your organization.


- 1. Potential for added complexity from nascent technology.** Agentic solutions are new, so not many of them have been used in large-scale enterprises for any significant time. This means there aren't many best practices or much knowledge you can use as you chart your course with agents. You're innovating and improving on the fly.

Mitigation tips:

- Build your agentic solutions using a modular approach that delivers interoperability. Think about your architecture with the goal of making it as flexible as possible so you won't have to throw away your hard work as technology evolves.
- Treat agent development projects more like innovation initiatives than traditional IT projects so you can iterate along the way. Use a sandbox approach to experiment with your emerging technologies. Include technologies you've vetted at an initial stage in your development environment.
- Engage third-party partners for some vetting and experimenting processes. Top firms are deeply connected within the tech startup community and better equipped to stay on top of key developments in this incredibly fast-moving GenAI landscape.

What's the big deal with GenAI agents?





2. Dependency on high-quality data. Like most GenAI solutions, agents rely heavily on access to high-quality data that can influence the action or task they need to complete. If your enterprise data isn't in order, now is the time to make that happen. Organizations have been struggling with this challenge for many years. Can we realistically resolve it? We would argue that enterprise data will never be perfect. Trying to make it so could significantly derail your progress in deploying GenAI and realizing tangible value from it.

Mitigation tip: Use a capability roadmap that's grounded on the incremental value you can deliver, not on the technology or data quality. For example, the first phase would deliver 30% of the total value of your GenAI initiative (and only require a portion of your data to be in prime condition). The next phase unlocks 60% of the total value, and so on. In this model, you work with data workstreams to get them ready for the next stage of value; you don't prepare everything upfront, which delays the delivery of incremental business benefit.

3. Mature AIOps are required for success. Like the ML and AI models that came before GenAI, it takes a team and a process to keep these models on track. So, if you have an existing MLOps program in place, you might think you can use the

same or a similar approach for agents. Unfortunately, that's not the case. You need robust AIOps — also called LLMOps — to safeguard against more than model drift. Effectively managing agent workflows is a more involved process. It includes special guardrails, continuous monitoring and a robust user feedback loop.

Mitigation tips:

- Assemble an open-minded team who can identify the specific challenges that come with managing LLMs. This will enable you to assign the appropriate resources, either internal or external, to address any issues that arise. Also, create a tiger team who tracks and evaluates new tools, datasets and frameworks that may help. It's a new area, but it's evolving rapidly. Staying on top of new options is likely to pay off.
- Consider implementing an LLM-as-a-judge construct, which leverages the capabilities of large language models to automate some of the monitoring and management of GenAI responses. LLMs are scalable, cost-effective and can adapt to judging different types of responses without extensive retraining. That said, apply this approach with caution; LLM training data can have inherent bias and the reasoning behind responses is not always clear.

4. Data access and privacy concerns. Depending on the task, agents might require access to internal data to act on a person's behalf. This could raise concerns about governance vulnerability.

Mitigation tips:

- For especially sensitive situations, consider instituting access controls, limiting the actions agents can take and creating walled-off environments for agents that limit their access to specific data sources and systems.
- Real-time agent activity monitoring that generates suspicious behavior alerts, as well as compliance checks and audits on a consistent schedule, can be effective in tracking and minimizing potential data security concerns.

5. Cost management. While the cost of GenAI systems is decreasing, agents can be expensive and inefficient. Carefully evaluate the value within a workflow.

Mitigation tip: Use a multi-model approach. Because some models are cheaper than others, using a hierarchy of multiple models allows you to cycle through them from least to most expensive. It's an effective method for weighing the performance you need against the cost.



Riding the agent wave



The rapid rise of GenAI agents marks a transformative leap in an already transformative AI landscape. Agents can revolutionize workflows by executing specific tasks with minimal human intervention. These systems have the potential to deliver the productivity and value-creation gains that many companies' early GenAI efforts have struggled to achieve. But before you jump into your own agent initiative, it's important to make the business case for your investment. This includes understanding and preparing for any challenges that may arise. It also means staying focused on business value while remaining adaptable in execution. By doing so, you can ride this next wave of GenAI innovation to unprecedented levels of efficiency, growth and differentiation.

About the author:

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As Chief AI Officer for North America, Wendy leads the development of NTT DATA's AI thought leadership and practice offerings. She works directly with clients, project teams and the global NTT DATA organization to develop AI strategies and roadmaps that deliver competitive advantage. Wendy's career spans 25 years in the AI & Advanced Analytics discipline, encompassing both corporate and consulting experience for household-name brands, including Delta, Macy's, Western Union and the U.S. Army. She holds a degree in Industrial & Systems Engineering from Auburn University.

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NTT DATA is a business and technology service provider uniquely capable of supporting your entire GenAI journey — from strategy to infrastructure. We help clients identify their highest-value use cases, build and manage the data centers and network infrastructure that power GenAI, fortify the enabling data foundation, and then create, train and deploy the models.

Our global scale, full-stack transformation portfolio and strong alliances with hyperscalers like Microsoft Azure, Amazon Web Services and Google Cloud Platform mean we can integrate and manage technology solutions seamlessly across business operations. Our deep industry expertise helps our clients keep pace with market and technological trends and achieve competitive advantage. Backed by NTT Group's \$3.6 billion annual investment in research and development, we are at the forefront of technology innovation, using our decades of experience in AI and GenAI to build powerful platforms, tools and accelerators that speed the delivery of results — ethically and sustainably.

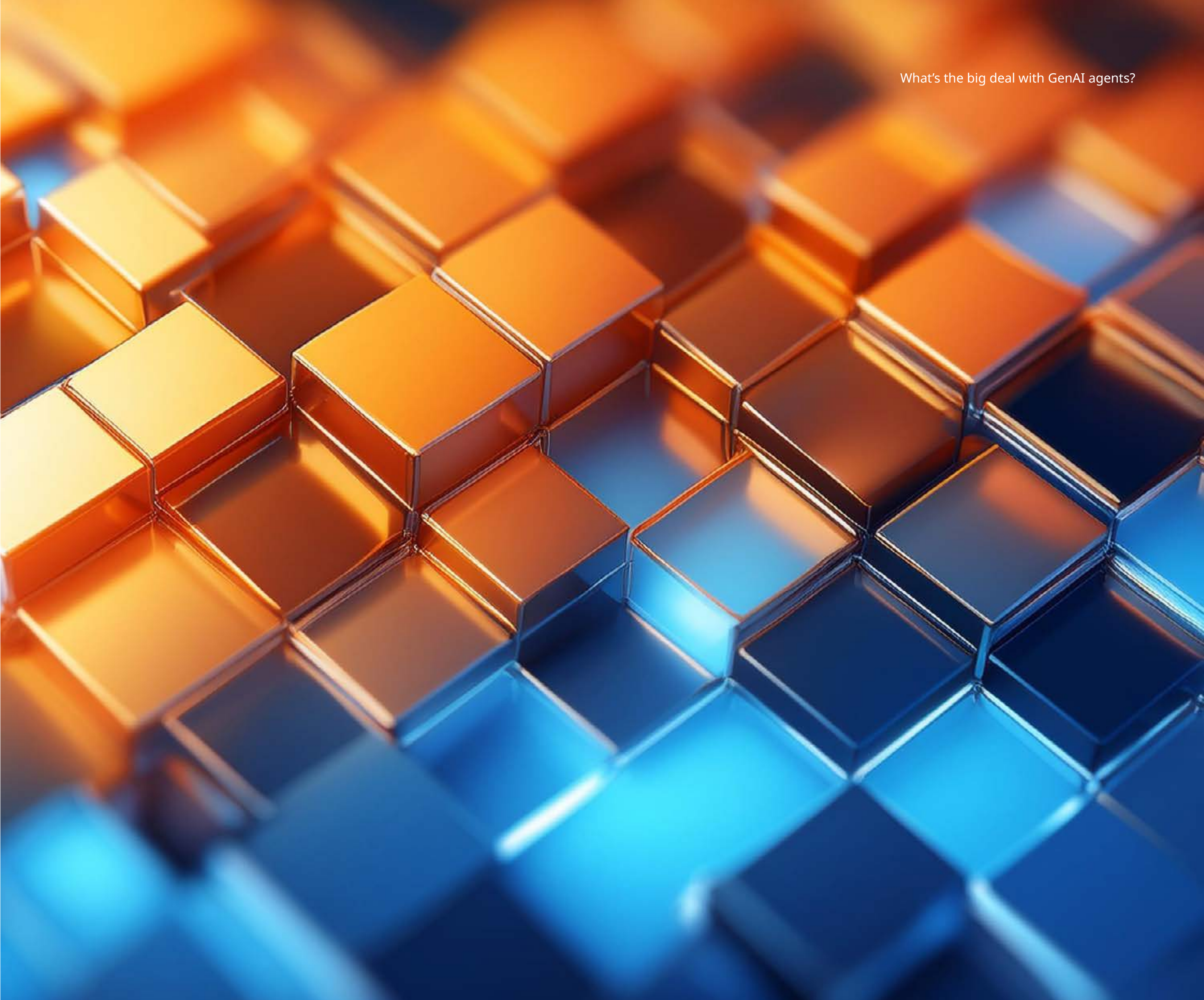
Learn more about NTT DATA's AI and GenAI capabilities

Visit our site

List of abbreviations

Abbreviation	Meaning
GenAI	generative AI
RAG	retrieval-augmented generation
POC	proof of concept
LLM	large language model
API	application programming interface
ML	machine learning

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Visit us.nttdata.com to learn more.

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