NTT DATA

Agentic AI for insurance

Solution-oriented agentic AI adoption delivers measurable impact

Digital-first competitors such as insurtechs and platform providers are redefining customer expectations with seamless, personalized models that traditional insurers struggle to match. At the same time, the industry is contending with significant workforce pressures: an ageing population, difficulties in backfilling specialized roles, and a shortage of skilled professionals are creating operational strain. Together, these forces are accelerating the need for insurers to rethink processes, embrace digital tools, and explore the role of AI, including agentic AI, in building more efficient, resilient and customer-focused operations.

Regulation adds another layer of complexity. The EU AI Act is shaping adoption strategies across Europe, demanding strong compliance and governance from the outset, while insurers in other parts of the world such as North America and Asia move more quickly under lighter oversight. This divergence is creating a global patchwork of adoption rates, but the trend is consistent: AI is becoming a point of competitive differentiation and a necessity in a changing world.

Insurance is fundamentally a data-driven industry, making it a natural candidate for AI. Generative AI and agentic AI in particular offer insurers the ability to transform efficiency, customer experience and resilience. The challenge is not whether to adopt AI, but how to implement it effectively where it truly creates measurable value.

From NTT DATA's perspective, agentic AI is not a solution in search of a problem. It is a tool, powerful when applied in the right context and wasteful when deployed indiscriminately. Take, for example, the processing of 100,000 routine insurance claims per day. While agentic AI could be applied, a rules-based workflow or RPA tool may be a simpler and more cost-effective option. The real value of agentic AI lies in applying it with precision, in contexts where its ability to reason, act autonomously, and handle unstructured data delivers measurable improvements.

In insurance, this can mean accelerating claims processing by enabling agents to gather documents, validate information and cross-check policies, reducing turnaround times and boosting customer satisfaction scores. It can also enhance fraud detection by identifying complex patterns across large datasets, directly improving loss ratios. In customer service, agentic AI can power conversational interfaces that resolve a high volume of enquiries, lowering operational costs while improving service quality. By aligning these applications to clear KPIs such as claims resolution time, customer experience metrics, productivity gains or fraud detection rates, insurers can ensure agentic AI investments translate into tangible business value.
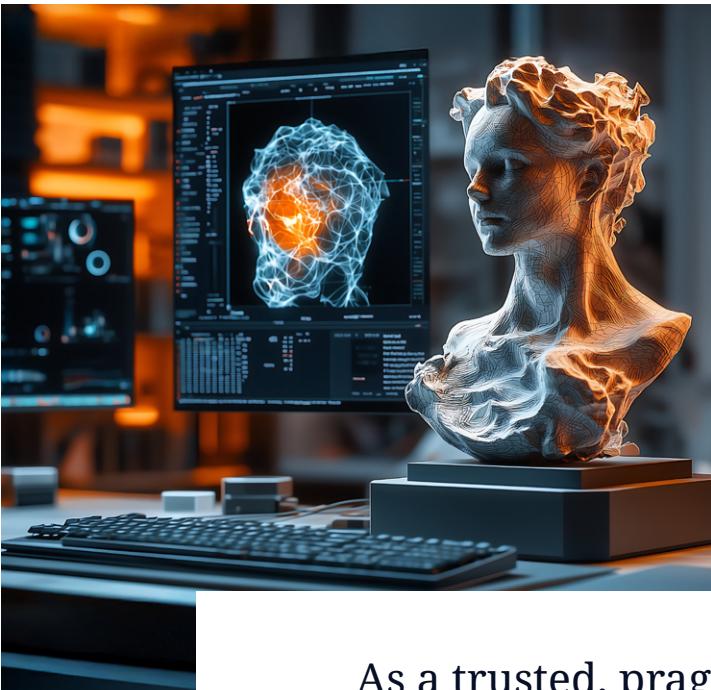
"As a trusted, pragmatic partner, NTT DATA helps insurers cut through the noise to identify these opportunities and deliver agentic AI with real impact."

The current state of agentic AI adoption in insurance

Adoption is unfolding at different speeds around the world. In North America, insurers are aggressively piloting and deploying agentic AI solutions. A lighter regulatory environment encourages experimentation, with many use cases already moving into production. Adoption is visible in areas such as claims processing, customer service automation, and fraud detection, where insurers are under pressure to improve speed and reduce costs. For example, claims automation projects have reduced resolution times by up to 30%, while conversational AI is easing call centre workloads by handling routine enquiries and boosting customer satisfaction scores. Fraud detection is also showing measurable results, with some insurers reporting a 5% increase in identified fraudulent cases, a shift that translates directly into improved loss ratios. These outcomes mirror the global results NTT DATA has already delivered, including productivity gains of more than 70% in claims processing and a 65% reduction in manual IT helpdesk workloads.

In Europe, insurers are equally aware of AI's potential, but their approach is more measured. The EU AI Act is raising the bar for governance, traceability and explainability, slowing adoption in the short term but ensuring initiatives are responsible and sustainable. Beyond regulation, European insurers are cautious because they recognize that their most important currency is trust. Any failure in how AI is applied, whether in underwriting, claims or customer engagement, risks eroding the confidence of policyholders, regulators and markets. As a result, insurers are deliberate in identifying where agentic AI can deliver genuine value without jeopardising trust. Early pilots show promise in areas such as claims and policy servicing, where automation can accelerate turnaround and improve accuracy, while maintaining the transparency customers expect. These efforts are aligned with the same types of global results achieved elsewhere, including 70-90% faster onboarding in agreement reviews and 98% accuracy in work order assurance across high-volume processes.

Regardless of geography, insurers face the same fundamental pressures. Customers are demanding digital-first, transparent and personalised experiences while still expecting a human touch when it matters most. In practice, this means that while routine queries or straightforward claims can be handled by AI for speed and convenience, customers still want reassurance from a person during sensitive interactions, such as resolving a claim after a major loss or making complex coverage decisions. Insurers are also faced with rising operational costs and shrinking workforces, as well as competition from insurtechs and AI-native new entrants that move faster, with less legacy to constrain them.

Insurance has always been a data-centric business, and agentic AI adoption is a natural extension of this reality. The question is not if but how and where it should be deployed.

What makes agentic AI different

Agentic AI marks a progression beyond traditional automation or even generative AI. Where traditional AI generates predictions or content and leaves execution to humans, and robotic process automation (RPA) automates narrow, rules-based tasks, agentic AI combines perception, reasoning and action. These agents can autonomously complete workflows end-to-end, adapting as conditions change.

This does not eliminate human involvement. Oversight, governance and decision-making remain essential. But agentic AI shifts the role of humans from repetitive execution to higher-value oversight, enabling faster, more resilient and more intelligent operations.
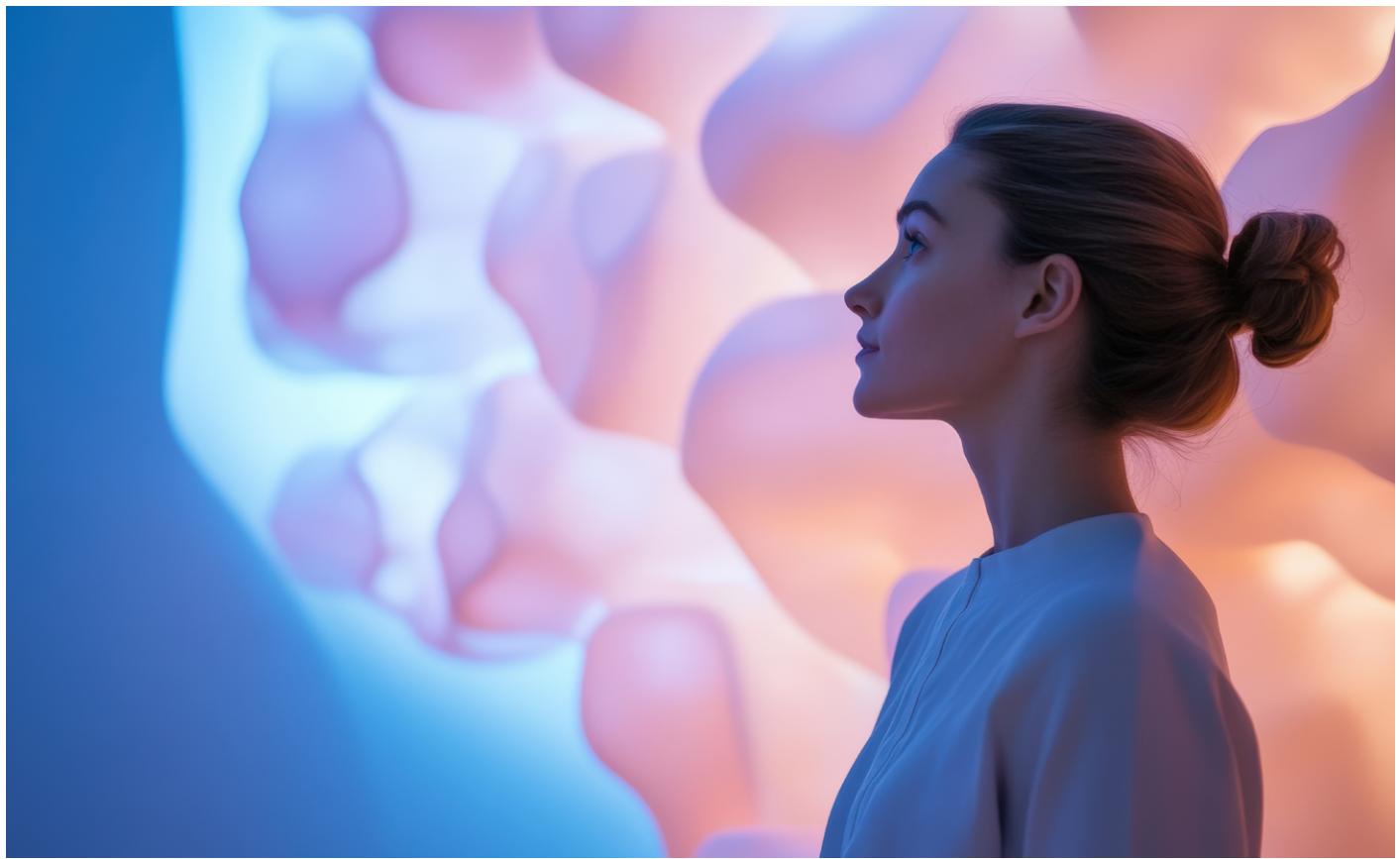
For insurers, this means that AI solutions no longer simply support processes. Agentic AI can run them, delivering efficiency gains that were not achievable before.

Applications for agentic AI in insurance

Agentic AI is most valuable where workflows are high-volume, repetitive and data-intensive, with clearly defined rules or patterns that make them well-suited for automation. These are the areas where automation will drive the most meaningful impact in efficiency, cost reduction, and customer experience.

Applications in insurance include:

Claims processing and servicing — Automating intake, validation and resolution accelerates claim cycles, reduces costs and improves customer satisfaction. Insurers deploying agentic AI have reported up to 90% faster FNOL (first notice of loss) processing and 20–25% reductions in claims adjusting expenses.

Underwriting and decision support — Context-aware knowledge retrieval and recommendations support underwriters in making faster, more accurate decisions. Case examples show 150%+ gains in underwriter productivity, alongside measurable improvements in decision quality.

Customer and contact center operations — Conversational AI agents resolve routine queries across chat, voice, and self-service channels. Results include a 50% reduction in escalations, a 10-point uplift in NPS for policy origination, and a 2x increase in customer sales contacts.

Fraud detection and risk management — AI agents can analyse millions of transactions in real time to identify anomalies and potential fraud patterns that would be missed by rules-based systems. This increases detection rates and reduces false positives, enabling investigators to focus on the highest-risk cases. For insurers, this directly strengthens fraud prevention, improves loss ratios and protects customer trust.

IT service operations — Agentic AI has been shown to cut manual handling of IT helpdesk tickets by 65%, automating triage, resolution and escalation.

Software development and quality engineering — Deploying agentic AI across the software development lifecycle, from requirements engineering through testing, enables insurers to accelerate delivery while improving quality. Benchmarks indicate cycle time reductions of 10–20% are realistic today (with some pilots achieving up to 30%), while bug rates can fall significantly, resulting in faster time to market and greater application stability.

Self-healing operations — AI can monitor infrastructure, detect issues before they escalate and trigger corrective actions automatically, improving operational resilience.

Proven impact

**A typical insurer spends around 60% of labour costs on underwriting and claims — processes with enormous potential for transformation.
By applying agentic AI in targeted areas, insurers have already realised:**

In addition, NTT DATA has helped insurers modernise legacy IT systems more cost-effectively. Transformation timelines that previously spanned 3–5 years have been reduced to 12–18 months, accelerating value creation while lowering capital investment. These are tangible results that demonstrate how well-chosen applications of agentic AI translate into measurable business value.
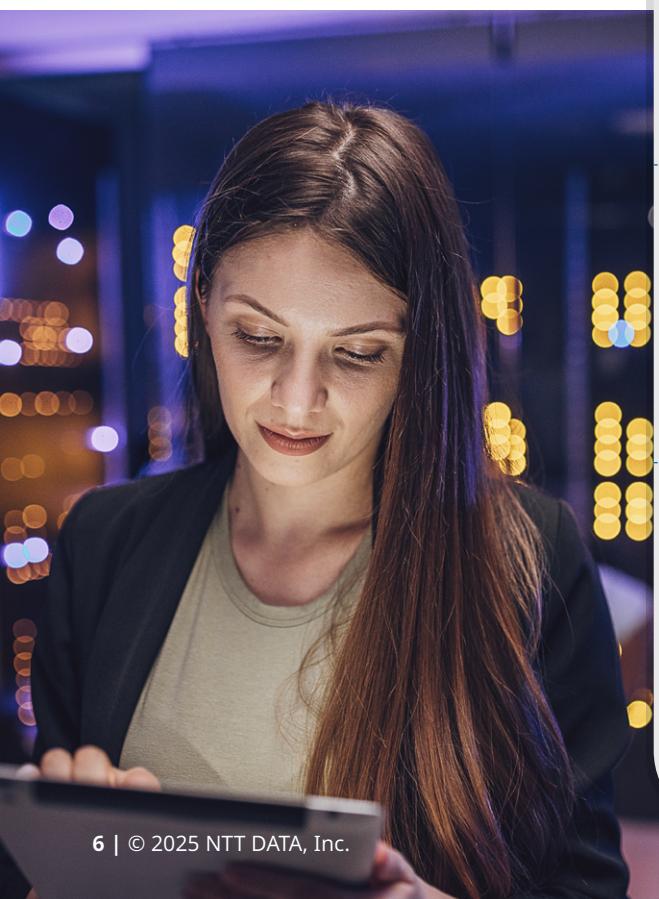
50% improvement in cash flow

90% faster FNOL processing

150%+ uplift in underwriter productivity

20-25% reduction in claims adjusting expenses

50% fewer customer escalations

2x increase in customer sales contacts

Challenges and opportunities

While the applications for agentic AI in insurance are broad, adoption is not without barriers. Technological challenges are only part of the issue, as there are also organizational, regulatory, and cultural factors that need to be considered. However, each challenge also presents an opportunity if addressed strategically.

Challenges

Regulatory constraints: The EU AI Act and other evolving frameworks demand that insurers embed compliance, traceability and explainability into every AI initiative. This increases time to deployment but also ensures responsible use.

Legacy systems: Many insurers still rely on complex, fragmented legacy IT estates. Simply layering AI on top can mask inefficiencies rather than resolve them. Successful adoption often requires careful orchestration with modernization initiatives.

Cultural and organisational resistance: Fear of job displacement, caution in decision-making, and entrenched ways of working can slow down adoption.

Talent shortage: Expertise in generative AI, agentic AI and applied data scoence is in short supply across the global market. This makes it difficult for insurers to build internal capabilities at the pace required, slowing implementation and scaling.

Risk of misapplication: Deploying AI in areas where it adds little value can result in spiralling cost, high energy consumption and erosion of trust in AI programs.

The key to successful adoption lies in prioritisation — it is critical to find the contexts where AI tangibly improves business outcomes and design adoption programs around those points of value.

Opportunities

Efficiency gains: Properly targeted applications of agentic AI can reduce costs, shorten cycle times and free employees to focus on higher-value tasks.

Speed to market: AI-enabled workflows support faster product development and launch.

Improved customer and employee experience: Autonomous support in claims, customer service and policy management creates smoother journeys for customers and reduces repetitive workloads for staff.

Resilience and competitiveness: Early adoption of agentic AI builds capacity to compete with AI-native new entrants and adapt quickly to shifting market dynamics.

Risk of misapplication: Deploying AI in areas where it adds little value can result in spiralling cost, high energy consumption and erosion of trust in AI programs.

Fraud management: AI agents can analyze vast volumes of transactions to spot anomalies, increase detection rates, and reduce false positives. Stronger fraud prevention translates into less claims leakage and direct P&L impact.

Portfolio risk optimisation: Agentic AI can support underwriters by surfacing context-aware insights and improving precision in risk assessment. This strengthens portfolio management, supports more accurate pricing, and helps insurers meet solvency requirements such as Solvency II.

Risk management: AI can strengthen fraud detection, anomaly analysis and operational resilience when embedded with the right governance guardrails.

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Turning AI potential into measurable outcomes

NTT DATA's approach is rooted in pragmatism: helping insurers adopt AI only where it creates measurable business impact. We combine deep insurance expertise, global delivery capability and proprietary AI assets with a proven framework for responsible, scalable adoption.

End-to-end lifecycle support

" NTT DATA supports the entire journey of agentic AI adoption, from assessing business challenges and identifying relevant use cases, to designing, deploying, monitoring and optimizing solutions. We build for scale and long-term impact."

Proprietary tools and accelerators

Tsuzumi lightweight LLM

Our proprietary model designed for enterprise-grade deployments in regulated environments.

Smart AI Agent™ ecosystem

A suite of interoperable agents and accelerators that integrate seamlessly with client environments to reduce time-to-value and total cost of ownership.
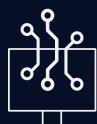
GenAI accelerators and frameworks

Reusable assets for rapid prototyping, policy-based guardrails, and usage analytics.

GenAI TechHub

NTT DATA's global repository of reusable GenAI prototypes, components, toolkits and solutions, enabling rapid development and deployment of GenAI use cases across industries.

AI Innovation Lab, Munich

A full-stack environment dedicated to applied research, co-creation and piloting of AI solutions in partnership with leading technology providers such as Mistral. The Lab provides a controlled environment where insurers can explore, test and validate GenAI and agentic AI solutions before scaling them across their operations.

Governance and compliance by design

We understand the stringent regulatory context insurers face. Our AI Enablement Framework embeds governance, security, and compliance at every stage, ensuring that AI adoption aligns with the EU AI Act and local regulatory requirements. This includes policy-based guardrails for safe deployment, full traceability, monitoring and explainability of models, and continuous performance and drift monitoring to maintain trust and accuracy.

Flexible engagement models

We tailor delivery models to the needs of each client. In some cases, we run pilots on NTT DATA platforms, allowing insurers to experiment quickly and validate value in a controlled environment before committing to scale. In others, we co-develop and embed solutions directly within the client's IT estate, ensuring compliance with stringent security and regulatory requirements while enabling seamless integration into existing operations.

Change management and knowledge transfer

We lower barriers to adoption by embedding AI fluency across client teams. This includes:

- **Co-development:** joint projects that build client capability alongside solution delivery.

- **Playbooks, guides and FAQs:** clear, role-based resources that make adoption sustainable.

- **Hands-on knowledge transfer:** code walkthroughs, architecture explanations and upgrade pathways that empower client teams.

- **Parallel run models:** running AI alongside human processes initially to build trust and manage workforce concerns.

Track record and partnerships

NTT DATA brings proven experience in delivering AI at scale, with more than 400 agent solutions already implemented worldwide. These projects have generated tangible results, from reducing IT helpdesk workloads by 65% to improving insurance claims productivity by 70%. Our leadership in generative AI has been recognised by analysts such as ISG, HFS, Everest Group, and Gartner.

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> We also maintain strong partnerships with leading technology providers including OpenAI, Microsoft, AWS, Google, Mistral and NVIDIA, ensuring our clients benefit from the latest innovations and co-development opportunities."

With a history of long-standing collaborations with leading insurers globally and a workforce of more than 300,000 professionals, NTT DATA has the scale, expertise and trusted relationships to deliver meaningful impact.

Our difference

Insurers need solutions that address real business challenges, not technology for its own sake. That is why NTT DATA designs and delivers targeted, enterprise-grade solutions that respond directly to customer needs. Every deployment is built to help insurers become more efficient, resilient, and customer-centric — while remaining fully compliant with the stringent standards of regulated industries. Our role is to ensure that AI adoption creates measurable impact where it matters most, combining purpose with precision to deliver outcomes clients can trust.

The future of agentic AI in insurance

Insurers must act strategically. While they may not need to be first movers, they cannot afford to be left behind. A fast follower strategy — learning from early adopters, experimenting in low-risk workflows and scaling successful models — can provide the right balance of innovation and caution.

"To move faster, some insurers may choose to establish new, agile entities decoupled from legacy systems. These units can experiment with AI-native processes and then integrate successful practices back into the core business."
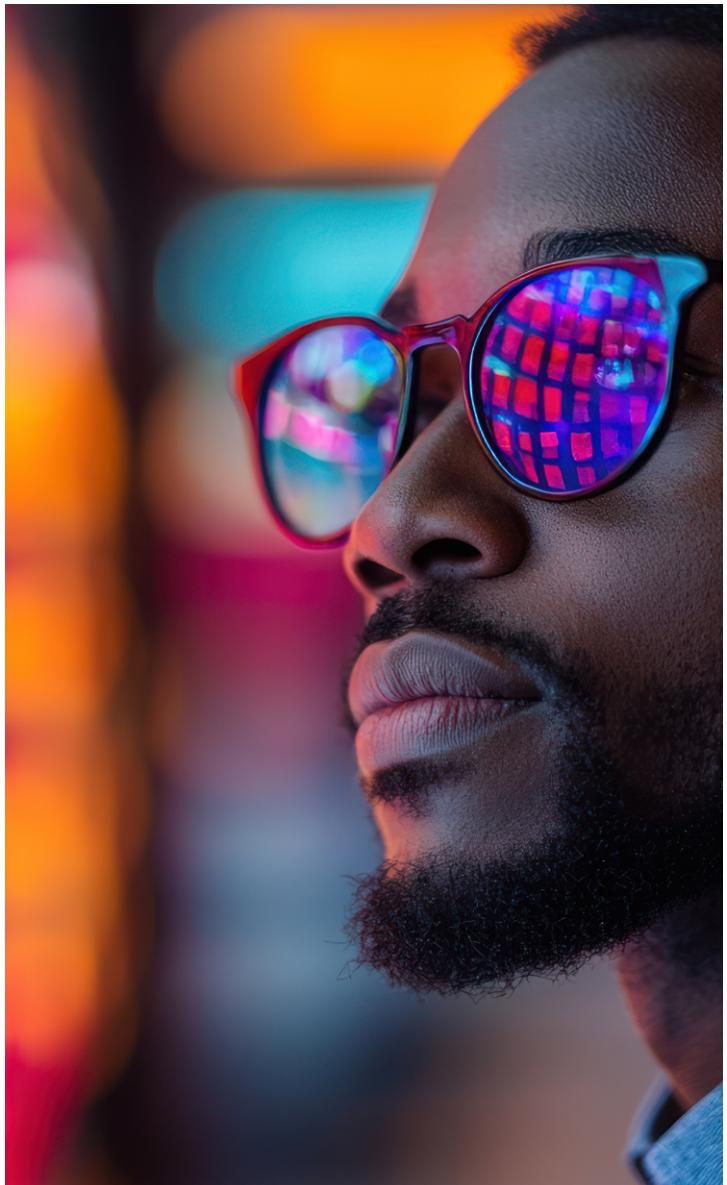
The customer of the future will expect frictionless, personalized, digital-first experiences. Insurers who prepare now by embedding AI across the value chain, from customer onboarding and engagement to underwriting, claims and operations, will be best positioned to compete. Those who act early will not only improve efficiency and speed but also strengthen customer loyalty and trust in an increasingly competitive, AI-native marketplace.

Moving forward with confidence

"Agentic AI is not a silver bullet. It is, however, a powerful tool that, when applied in the right contexts, can transform insurance operations, reduce costs, improve decision-making and enhance the customer experience. The key lies in adopting it responsibly, selectively and with clear business outcomes in mind."

When applied effectively, agentic AI can deliver measurable improvements to the bottom line: optimized portfolios, enhanced fraud prevention, faster product development, and new opportunities for cross- and up-selling.

NTT DATA provides the frameworks, expertise and proprietary tools to help insurers realise these outcomes. With proven delivery experience, global scale and recognised leadership in AI, NTT DATA enables insurers to adopt agentic AI with confidence, ensuring every deployment delivers measurable impact and lasting business advantage.

For further information please read NTT DATA Insurance

Visit nttdata.com to learn more.

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