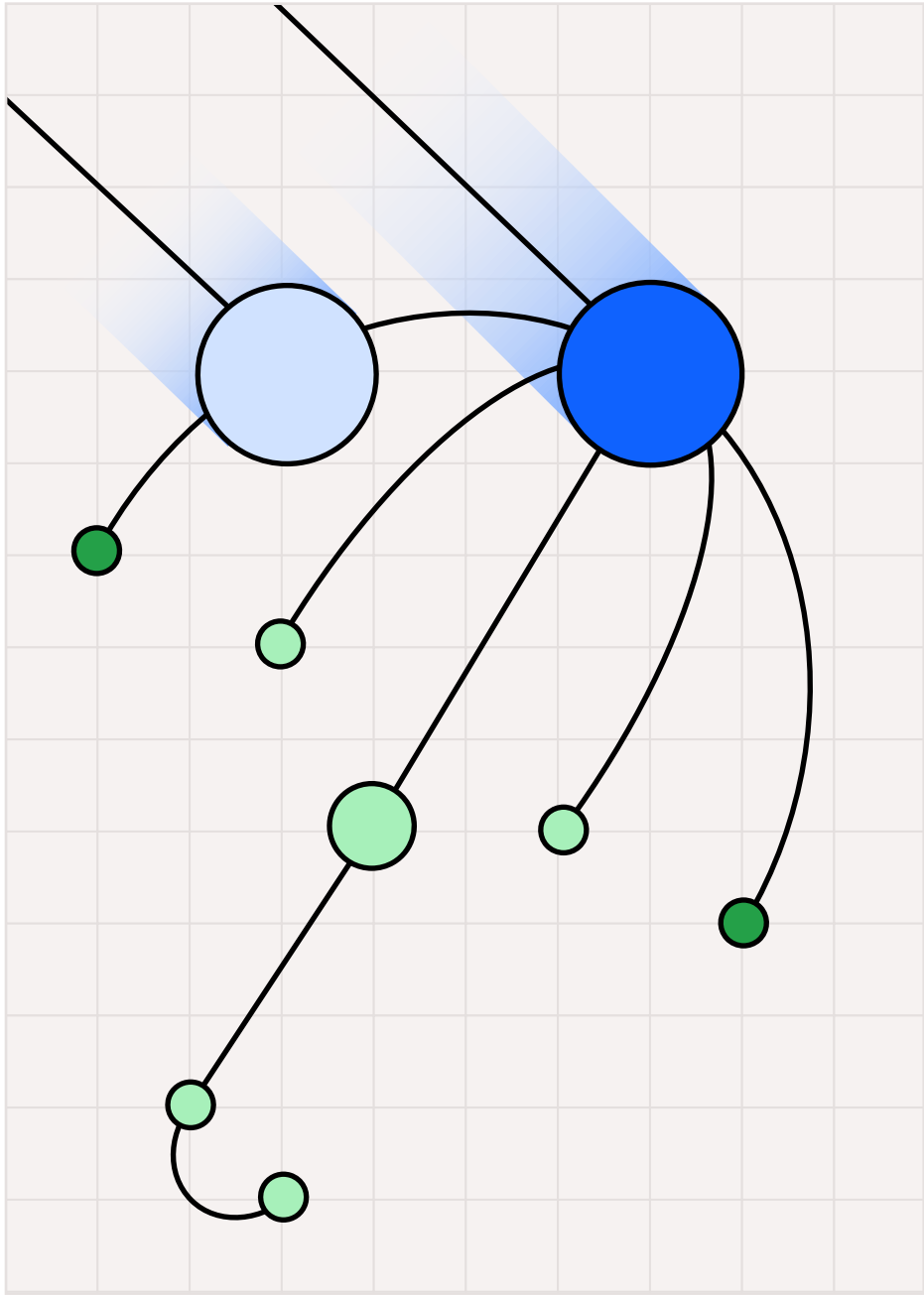
Insurance in the AI era

Embracing innovation, fostering responsible AI, and delivering exceptional customer value



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Foreword

The global insurance industry is in the midst of a profound transformation, fueled by the rapid advancement and adoption of AI. While the focus to date has been on using AI to optimize processes or enhance efficiencies, the technology is now set to reshape how insurance operates—unlocking opportunities to redefine customer engagement, operational agility, and how insurers modernize their business.

This report delves into the implications of AI on the insurance sector. It provides insights gleaned from new survey data and industry trends, serving as a timely guide for C-suite leaders seeking to capitalize on the opportunities presented by this game-changing technology.

A significant majority of insurance executives (76%) believe that AI will substantially enhance their ability to respond to market disruptions and evolving customer and employee expectations. In fact, they expect to almost double their AI spend focused on business model innovation over the next two years.

As insurers embark on this AI journey, they face both opportunities and challenges. Through one lens, AI has the potential to revolutionize operational efficiency, enhance customer experiences, and unlock new revenue streams. But widening the aperture, insurers must also address technical debt, skills gaps, regulatory compliance, and the imperative to align AI adoption with customer needs and expectations.

This report offers insurance executives a roadmap to harness the power of AI and drive sustainable growth, improve competitiveness, and shape the future of the industry. As we look ahead, the insurers who thrive in this new era will be those who embrace innovation, foster a culture of responsible AI, and remain steadfast in their commitment to delivering exceptional customer value and enhanced employee productivity.

Girish Ratnam
Insurance Industry leader, US
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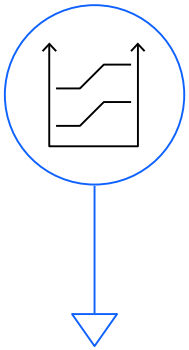
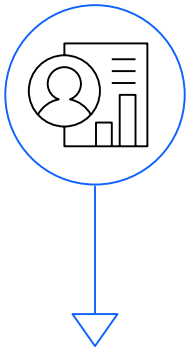
Key takeaways



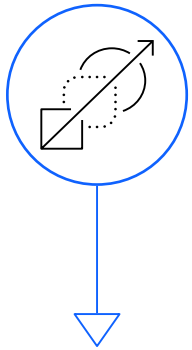
AI is transforming insurance operations.

Insurers are primarily leveraging AI for operational efficiency, with 40% of their AI spend allocated to enhancing operational effectiveness and cost reduction. Agentic AI will further strengthen this trend; 77% of insurers will use agentic AI in claims over the next year.



Customer expectations may temper AI-driven revenue growth.

The potential for AI to drive revenue growth is significant, with 75% of respondents believing AI will drive improvements in personalization and customer experience. However, insurers must align their AI-infused applications with customer expectations to avoid eroding trust.



Don’t ignore the elephants in the room: technical debt and skills gaps.

Insurers need to address technical debt and skills gaps to successfully implement AI. More than 4 in 10 insurers say they do not have adequate internal skills and expertise, highlighting the need for investment in skills development to modernize legacy systems.

Making insurance operations fit for the future

While AI has captured the imagination of leaders across business sectors, the insurance industry remains in the early stages of integrating this transformative technology into operations.

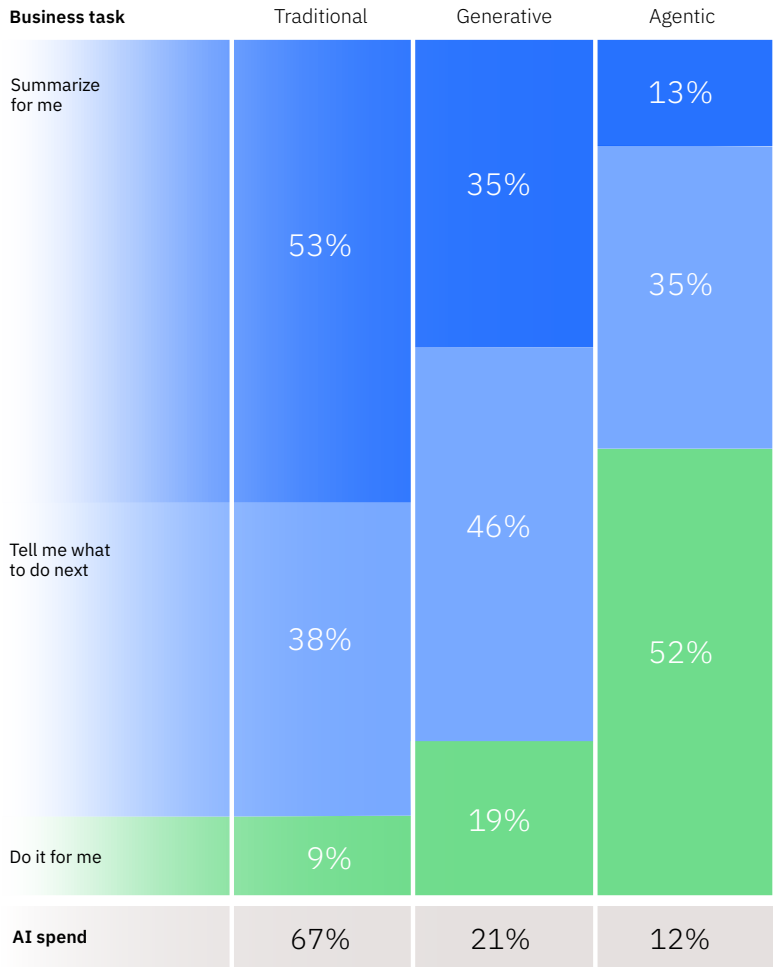
For traditional and generative AI, most use cases focus on traditional activities, such as summarizing tasks and creating next-step recommendations. But with the increased adoption of agentic AI, more than half of the use cases now focus on applying agentic AI to work autonomously (see Figure 1).

Insurers currently prioritize increased operational efficiency, cost reduction, and legacy system modernization. Using AI for business model innovation, which will have profound implications for growth during the coming years, still lags behind other AI applications, and is only starting to gain traction (see Figure 2). But now there is new urgency to rethink the role of AI as the insurance industry confronts the challenges of a volatile global economy. Economic uncertainty is creating headwinds, affecting premium growth, increasing claims costs, and reducing investment returns.[1]

Insurers recognize the critical role AI can play in navigating through these challenges. In fact, 76% of insurance executives believe AI can help them weather this storm and are already shifting budgets to investing in innovation as they prepare for the future. While 65% of current AI spending remains focused on operational efficiency and legacy transformation, there is a growing realization that AI is not merely a tool for optimization but an essential driver of resilience and reinvention.

FIGURE 1

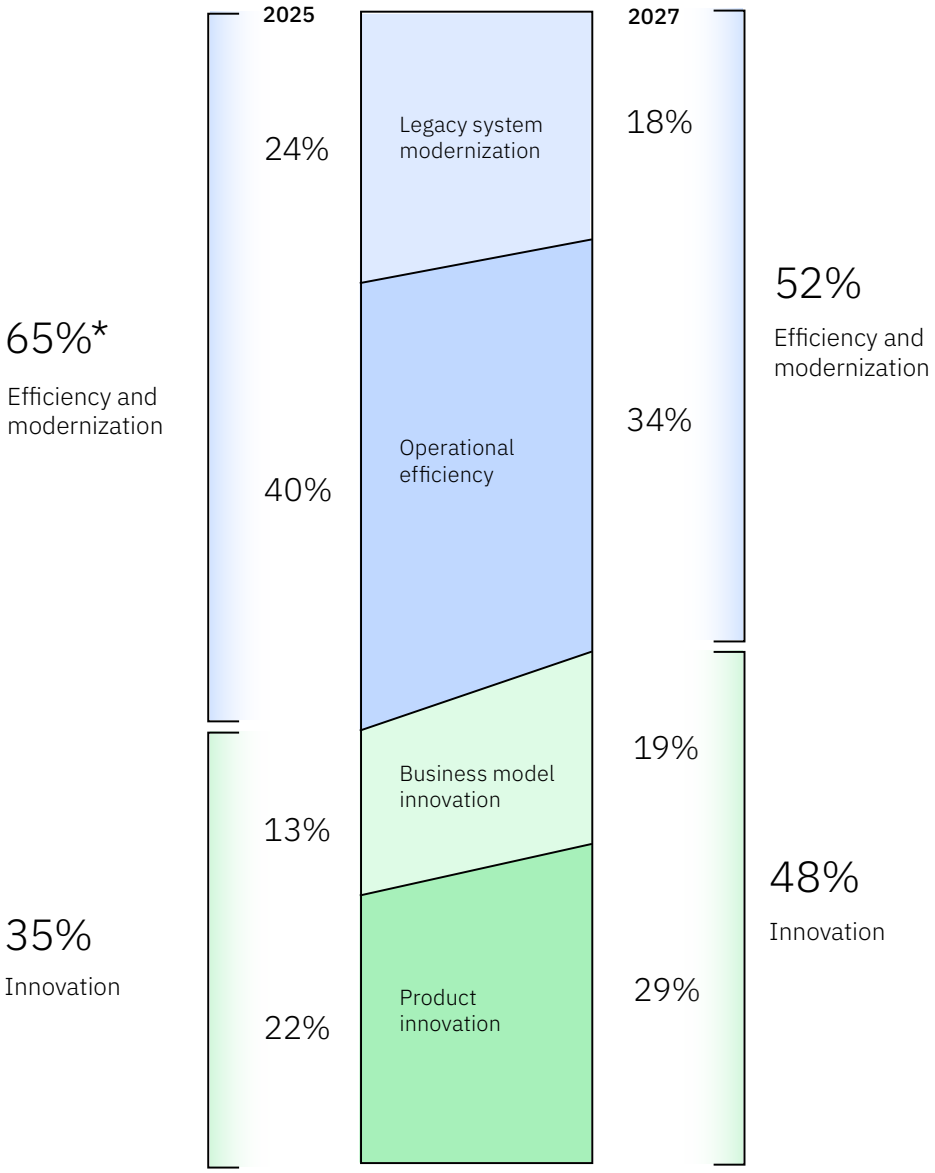
Primary AI applications for insurance companies



Q: How is your organization currently using AI?

FIGURE 2

AI investment priorities for insurance companies



**Percentages do not total 65% because of rounding.*

Q: What is/will be the breakdown of your AI spend across each of the following in 2025 and 2027?

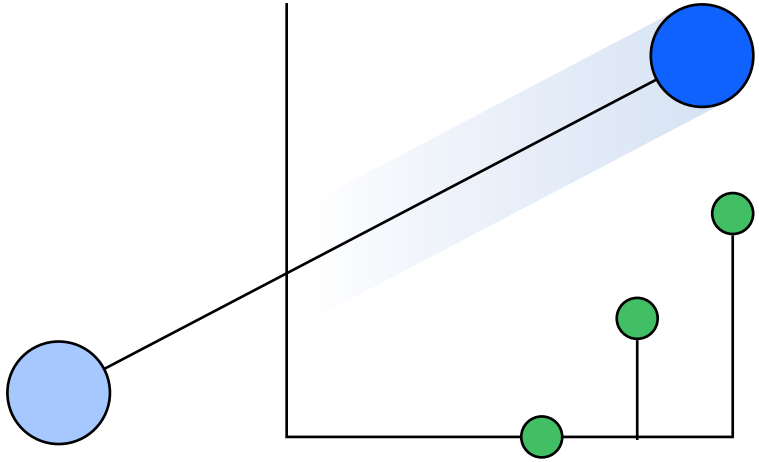
Insurers using AI have already seen an 19% reduction in claims processing time and a 15% acceleration in product time-to-market.

Agentic AI, with its ability to handle autonomous and complex tasks, stands out as a powerful ally in this transformation. It offers insurers an opportunity to accelerate both the “now” and the “tomorrow” of their AI journey. In the short term, agentic AI can deliver quick wins through tailored use cases that improve core insurance operations.

Examples include automated end-to-end claims orchestration—from damage inspection to repair estimates and payment initiation, as well as streamlining policy changes, such as adding a new driver to auto coverage. Back-office support for complex customer queries and edge cases can also be enhanced with agentic AI. These applications not only improve efficiency but also reduce the burden on human teams, providing more time for employees to focus on higher-value tasks.

The tangible benefits of AI adoption are already clear, with AI investments delivering measurable advantages in operational metrics. Improvements from AI include an 18.6% reduction in claims processing time and a 15.4% acceleration in product time-to-market. These gains help insurers remain competitive in a rapidly evolving market while laying the groundwork for future innovations.

Driving revenue growth with AI



The potential of generative AI and agentic AI to drive revenue growth in the insurance industry is substantial, with 80% of executives saying AI will contribute significantly to revenue in the next three years.

To realize this potential, insurers need to focus on developing customer-centric applications and commit to using AI technology that aligns with customer expectations without eroding trust. In fact, 75% of executives believe AI will drive personalization and customer experience improvements.

But our research on generative AI in insurance revealed a disconnect between what insurers prioritize and what customers desire. While insurers focus on improving customer support and service, customers are more interested in having products tailored to their personal needs and preferences.[2] Insurers can leverage generative AI to deliver personalized pricing or promotions, an area where both insurers and customers see significant value.

Moreover, insurers can utilize AI to expand their product range and enhance customer engagement. By analyzing customer data and feedback, insurers can create more tailored products that meet the specific needs of their customers. Our research suggests that early adopters of generative AI in customer-facing systems see a 14% higher customer retention rate and a 48% higher Net Promoter Score (NPS), compared to other organizations that have not adopted this technology.[3]

Agentic AI offers additional opportunities. While still in the early stages, specific insurance industry processes have already been targeted for agentic AI integration (see Figure 3). Examples include automated evidence gathering using internal and external record sources in commercial property underwriting, and hyper-personalized outreach campaigns where AI agents monitor customer life events from consented data sources and trigger personalized products and services at the appropriate time.

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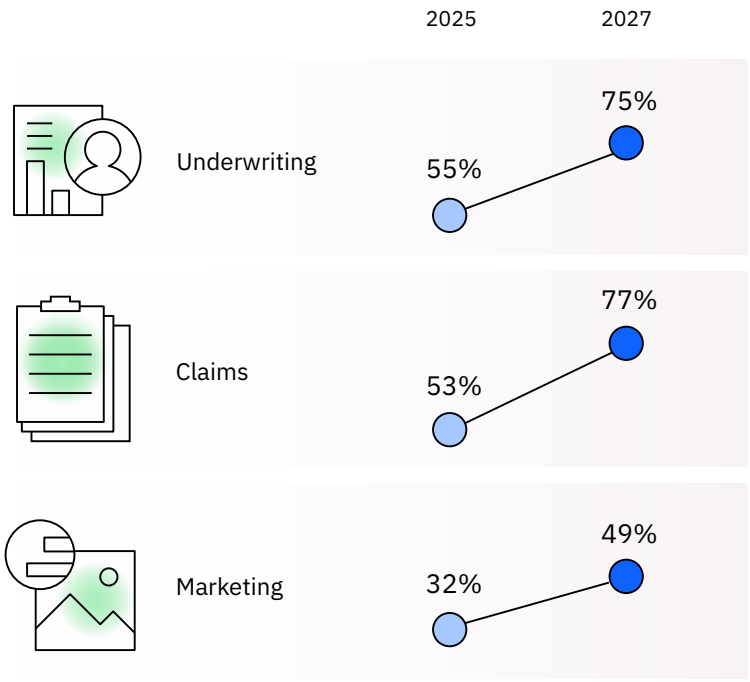
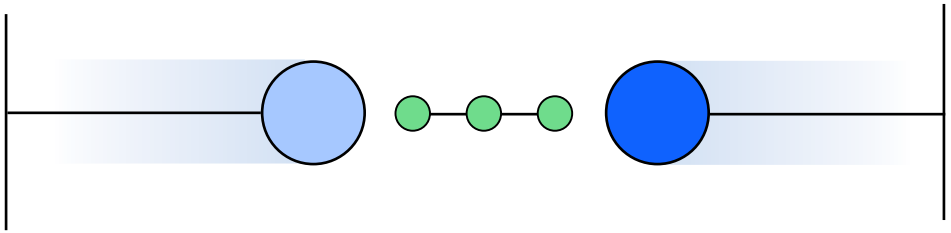
FIGURE 3

Where insurance companies are using agentic AI now and in the near future



Addressing technical debt and closing AI skills gaps



To successfully implement AI—a technology that imposes higher workloads on computing resources—insurers must look at their infrastructure requirements and tackle shortfalls related to technical debt. 71% of executives acknowledge struggling with the high costs of maintaining legacy applications, which hinders their ability to adopt new AI capabilities.[4]

And because successful implementation of AI tools requires significant workforce expertise, AI-related talent deficiencies can impede progress. More than 4 in 10 insurers say they do not have adequate internal skills and expertise, highlighting the need for investment in skills development to modernize legacy systems.

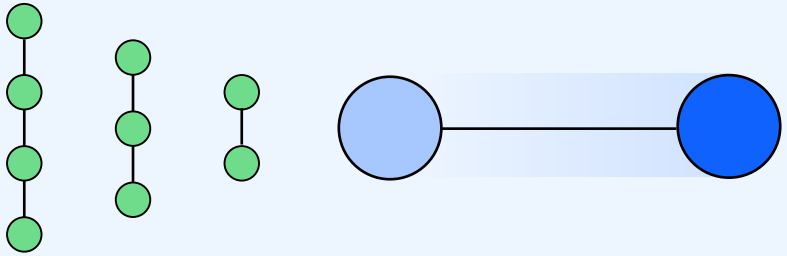
Insurers need to modernize their legacy systems and invest in skill development at the same time to support AI adoption. They are already working toward that goal by bringing in help from outside: 71% say they are effectively leveraging strategic partnerships with tech firms, vendors, and startups to accelerate AI-driven innovation.

Going further, insurers can leverage AI itself to address the ongoing issue of technical debt. By applying AI to modernize code in older applications and automate IT tasks, insurers can avoid complex core system consolidations and reduce technical debt. AI is also helping to explain legacy code before conversion to save time, reduce risk, and provide documentation when legacy developers depart before the conversion starts. Our findings reinforce the importance of adopting a hybrid-by-design architecture and leveraging open-source AI solutions to facilitate interoperability and reduce expenditure.

To help modernize legacy systems, 71% of insurance executives say they are effectively leveraging strategic partnerships with outside tech firms, vendors and startups.

Case study

Gen AI streamlines funding application processes[5]



The Italian National Institute for Insurance against Accidents at Work (INAIL)—is responsible for safeguarding workers against physical injuries and occupational diseases. In 2023, INAIL's budget increased by 65%. In the following year, the number of applications from companies in Italy grew by 50%, putting the organization under significant pressure to meet the higher demand.

To manage the surge, INAIL decided to support their contact center and office staff with a virtual assistant capable of answering the most-asked questions about the funding application process. Delivered through a web application, the assistant is designed to help companies understand eligibility requirements and submit applications, while reducing the need for ticket submissions and support calls to live operators.

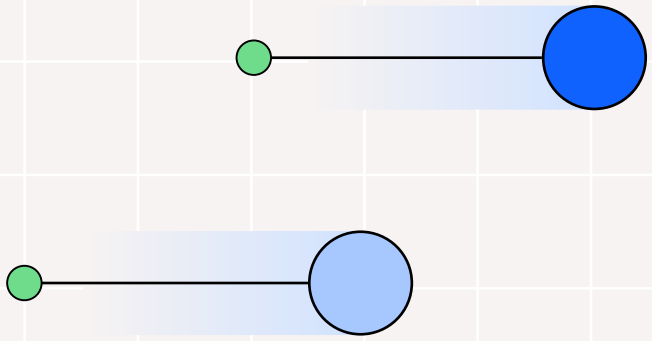
With the virtual assistant in place to handle applications, INAIL is experiencing productivity gains without increasing staff. The solution provides consistent responses for coherence and reliability, and applicants appreciate 24/7 assistance—avoiding waits and reducing the risk of missed deadlines.

INAIL is currently expanding the scope of the virtual assistant to cover other types of requests and topics, including technical aspects related to eligible projects. In addition to improving the management of funding applications, INAIL is developing a knowledge base to create automated verification systems during the review phases of approved applications.

Overall, AI-based solutions have enabled INAIL to successfully manage the increased volume of funding requests, helping to ensure more efficient, convenient, and consistent handling of inquiries.

Action guide

To translate the promise of AI into sustained growth and competitive advantage, insurers must follow a clear strategy and scale AI-powered solutions across functional domains. Here are four high priority action items for integrating AI into operations, customer service, infrastructure, and workforce culture.



Integrate AI in key insurance processes to streamline workflows.

Automate claims processing and underwriting by applying AI to streamline relevant workflows. This can cut manual errors and increase efficiency, reducing insurance placement from days to minutes. Use AI-driven predictive analytics to identify potential risks and opportunities, enabling proactive decision-making. Continuously monitor and assess the performance of AI-driven processes and refine them as necessary to help ensure optimal operational efficiency.

Personalize insurance products and services to enhance customer experience.

Develop tailored products using AI-driven insights; leverage gen AI to analyze customer data; and create flexible, personalized products that meet individual needs and preferences. Implement AI-powered customer service tools that use AI to enhance service quality in customer care and support timely and relevant assistance. Monitor and evaluate the effectiveness of AI-driven customer interactions using customer satisfaction metrics and adjust as needed to maintain satisfaction at high levels.

Address technical debt and AI skill gaps.

Technical debt makes IT initiatives slower and more expensive. Shift the conversation away from legacy maintenance to AI enablement and reallocate funding for tech debt reduction. Provide the leadership and training resources to help employees develop the skills required to work effectively with AI technologies. Implement a hybrid-by-design architecture that integrates new AI capabilities with existing systems to support interoperability and minimize technical debt.

Foster a culture of innovation and responsible AI.

Establish and enforce clear AI governance frameworks that outline ethics, regulatory compliance, and model performance standards. Encourage and foster cross-functional collaboration between business units, IT, and data science teams to help ensure effective and precise AI deployment. Promote an organizational culture that prioritizes responsible AI practices, including transparency, fairness, and accountability.

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Christian has 33 years of experience in the insurance industry as project manager, consultant, and researcher. He is a frequent speaker on thought leadership and innovation at events and workshops and has authored almost half a hundred papers on insurance trends and implications for IBV and international insurance industry publications.

Research methodology

IBM IBV, in partnership with Oxford Economics, surveyed 100 executives in insurance organizations located across Canada, Germany, India, the United Kingdom, and the United States. The respondents were CEOs, CIOs, CTOs, COOs, CFOs, or CDOs of their organizations. Focusing on larger insurers in each market, the average annual gross premium written in 2024 of the organizations included in the survey was more than $7 billion. The survey was conducted between May and June 2025.

In addition to key demographic variables, participants were asked about the use and value of generative and agentic AI, technology adaptation, business priorities, partnerships, and other insurance topics. Questions were posed in various formats including multiple choice, numerical, and Likert scale.

Our analytical approach began with foundational data preparation and descriptive statistics to help ensure data quality and uncover preliminary insights. This was followed by more detailed analysis of trends and expected changes in AI adoption, use, and impact over time. In addition, insights and recommendations in this report draw on case studies that provide more detailed perspectives on how insurers are using AI. Furthermore, our analysis draws on insights gained through extensive direct work with insurance clients across the world.

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How IBM can help

IBM's suite of AI solutions leverages data and trustworthy AI in sectors including commercial insurance, casualty insurance, life insurance, risk management, and healthcare. Insurance industry applications in customer experience, application development, IT operations, and digital labor can also yield significant value. To find out how AI and can boost efficiency and increase innovation for insurers, visit: ibm.com/industries/insurance

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Notes and sources

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