



Implications of generative AI
for insurance

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Generative AI and how it could affect insurance

Generative AI (Gen AI) is taking artificial intelligence to a new level by augmenting human creativity and imagination. It has the potential to transform the insurance industry by creating higher-order opportunities (i.e., new services, business models, and improved productivity across the insurance value chain). In an era of disruptive technologies, generative AI stands out for its ability to create new content without explicit programming. Unlike other disruptive technologies (automation, machine learning), which rely primarily on optimizing existing data and processes, generative AI has the potential to generate novel and creative outputs accessible to people independent of their technical aptitude.

Let's peek into a not-so-distant future—where a customer is applying for insurance on their first car. As they type in what they are looking for in a chat box powered by generative AI, it collects all required information and hands it over to the “anonymizer” bot, which generates a digital twin without any personally identifiable information. Now the insurer can leverage the digital twin to generate quotes, personalized for the customer archetype. Once the customer makes their selection, the insurer can automate and expedite the underwriting process through Statement of Value (SOV) extraction, third-party data augmentation, and digital risk fingerprinting. Similar advancements can be made on the claims processing through Edge AI—sensors in the car can assess impact and share data with the insurer, all done in the background while the customer must choose only whether or not they want to pursue the claim.

The opportunity

In today's formative era of generative AI, the popular enterprise opportunities and use cases are general purpose that are applicable across various industries or functions; sometimes categorized as "horizontal" use cases. Examples include dialogue generation for virtual assistants, automated code generation, marketing and sales content generation, etc. This use-case convergence across industries is enabling organizations to leverage capabilities built by others to improve speed to market and/or become fast followers.

However, the insurance industry presents distinctive sector-specific sustainable value-creation opportunities, referred to as "vertical" use cases, requiring domain knowledge, contextual understanding, expertise, and potential investment in fine-tuning existing models and building special purpose models. For example, point solutions created for analysis of unstructured data to identify risk patterns that inform underwriting decisions or providing claimants with instant information when they file the first notice of loss. The real game changer for the insurance industry will likely be bringing disparate use cases together to build a holistic, seamless, end-to-end solution at scale.



Unlocking value through investments

Insurers have a remarkable opportunity to create substantial value and realize the potential of Gen AI by making well-thought-out investments aligned with their respective business strategies. By focusing on three key value dimensions—profitability and growth, cost savings and efficiency, and operational intelligence and effectiveness—insurers can drive transformative results.

- 1. Profitability and growth:** Strategically directed investments can enable insurers to identify untapped growth opportunities, enhance product offerings, and expand market reach, ultimately driving profitability. While many insurers are still considering Gen AI applications for enabling use cases to generate new revenue streams, this has already been realized within the technology sector. For example, Google Bard, with its advanced features, is already driving new revenue streams by serving as the foundational technology enabling the Gen AI revolution.
- 2. Cost savings and efficiency:** By investing in Gen AI-driven solutions related to content creation for low-risk use cases, insurers can reduce spend across low-risk functional domains, thus enabling efficient spend allocation, which could lead to significant cost savings and operational efficiency gains. Examples include marketing (sales and branding), HR (job postings), and legal (contract generation).
- 3. Operational intelligence and effectiveness:** On an immediate basis, harnessing Gen AI for autonomous coding is accelerating the software development life cycle resulting in productivity gains and reduction in training time, which may enhance workforce productivity. Recent additions, such as Code Interpreter for ChatGPT, can help sales and support teams in automating document analysis (optimal character recognition) and performing data visualization.

By aligning investments with their business strategies across these dimensions, insurers can unlock tangible value and position themselves for long-term success in the dynamic insurance landscape.

Value-creation opportunities across insurance subsectors

Generative AI value-creation opportunities abound across the insurance value chain. However, since Gen AI is in its infancy, insurers are trying to strike the right balance between harnessing value from an emerging technology and managing risks appropriately. With those considerations, the following use cases are gaining the most traction across the insurance subsectors.

Property and Casualty (P&C)

Generative AI can help streamline the claims process and optimize risk management for P&C insurers.

- Streamlined claims processing (*Value drivers: enhance workforce productivity, enable cost savings and efficiencies*): Gen AI-powered chatbots can record and respond to first notice of loss and give customers real-time information on triage and repair services to improve turnaround time and customer experience.
- Enhanced loss prevention and control (*Value drivers: enhance workforce productivity, generate new revenue streams*): Gen AI can play a crucial role in risk identification and mitigation. By analyzing claims data from multiple sources and forms (e.g., Internet of Things, video, text), historical claims, and external factors (e.g., weather patterns), Gen AI models can help P&C insurers identify areas prone to losses, which can aid in the development of risk mitigation strategies and plans (e.g., recommending safety improvements, suggesting policy adjustments to reduce future losses).

Life and Annuity (L&A)

For L&A insurers, misconceptions or lack of knowledge about insurance has been a key deterrent to purchase (e.g., eight out of 10 millennials overestimate the cost of life insurance, one in three millennials do not have life insurance because they think they will not qualify or because they have not been approached¹). Insurers could use generative AI capabilities to reach and sell to the uninsured more cost-effectively.

- Product personalization (*Value driver: generate new revenue streams*): Gen AI can be effectively used for customer acquisition, as customers are researching insurance products online. It can be used to parse customer data across all insurer touchpoints and other third-party data sources (e.g., claims data, policy preferences, social media, insurance coverage gaps, etc.) to deduce customer needs for making personalized product or coverage recommendations. These tailored insurance plans will likely have greater opportunities to meet individual customer needs and preferences.

- Agent assistance (*Value driver: enhance workforce productivity*): By supplementing Gen AI within CRM tools, agents and producers can be provided with enriched and personalized information about the customers to sell efficiently. Gen AI can create text and image-based product summaries, as well as develop coverage comparisons, personalized coverage recommendations, and real-time illustrations, to assist agents to provide relevant information and answer questions in real time when engaging with a customer.
- Optimized underwriting and pricing (*Value drivers: enhance workforce productivity, enable cost savings and efficiencies*): Gen AI models can analyze vast amounts of historical data—both structured (e.g., claims data, location data, medical data, etc.) and unstructured data (e.g., data and images from social media) to assess potential risks, estimate claim probabilities, make underwriting decisions efficiently, and determine appropriate pricing for each customer.

Group

Group insurers can leverage Gen AI to provide additional value to employers and employees through tailored insights and recommendations.

- Customized group plans (*Value drivers: generate new revenue streams, enhance workforce productivity*): Gen AI can analyze data from a variety of sources (e.g., demographic information, health profiles, and historical claims data of group members) to generate insights and inform the design of customized group insurance plans and tailored benefits packages and options, enabling the employer to improve the value proposition of the benefits package.
- Improved member engagement (*Value drivers: generate new revenue streams, enhance workforce productivity*): Leveraging and analyzing member data (e.g., preferences, purchase history, social media data, etc.), Gen AI models can generate personalized health tips or provide financial advice to proactively equip members with informative insight and promote overall wellness.

Key ecosystem opportunities

Various technology players are actively building Gen AI capabilities across infrastructure or foundational model layer or through application development to unlock and capture value. Each layer is driven by different competitive dynamics influenced by scale, data access, brand, and captive customer base.

Within the infrastructure layer, the hyperscalers (Google, Microsoft, Amazon²) are dominating the market by providing scalable computing power and creating additional stickiness by entering into commitments with foundational model providers (e.g., Azure with OpenAI, Google with Anthropic,³ etc.) to guarantee future workloads.

In the foundational model layer, model builders (e.g., OpenAI, Stability.ai, Google, Amazon Bedrock) are attracting and retaining AI talent to design guardrails and learning mechanisms to ensure the robustness and reliability of models. To recoup investments, they are charging fees or integrating into monetized products (e.g., GPT-3.5 into Edge, LaMDA into Google search, usage of plugins such as Code Interpreter in GPT-4).

Finally, for the application layer, many startups have started building insurance industry-specific applications to cater to evolving needs:

- **Sixfold⁴** launched the first Gen AI-based tool to simplify and streamline the underwriting process and assess risk by collecting a myriad of data through multiple third-party data sources, spotting patterns, and summarizing the same into desired insurers' underwriting report format.
- **Dais Technology⁵** in collaboration with the Paladin Group has launched a large language model (LLM) and Gen AI-based underwriting tool called UnderwriteGPT to accelerate the underwriting and risk management process, leading to better pricing and coverage for policyholders.

- **InsurGPT⁶** developed by Roots Automation is a proprietary, fine-tuned LLM focused on the insurance market that reads and extracts data across structured (e.g., ACORD, medical claim forms) and unstructured documents (e.g., quotes, FNOL, insurance application and communications). It utilizes a deep corpus of insurance-specific data and documents alongside systems and process knowledge to significantly improve the accuracy, speed, and validity of data extraction and inferencing, while reducing false positives.
- **CoalitionAI⁷** launched by Coalition, deploys Gen AI and LLMs for brokers and businesses to protect themselves against cyber risk. It provides features such as chatbots to educate US brokers about cybersecurity best practices and policy details, and a control platform for cyber risk assessment and monitoring.
- **Simplifai⁸** has unveiled InsuranceGPT, its first LLM specifically trained on insurance-relevant data powered by its no-code AI platform.

Insurers should develop strategies to remain plugged in to the innovation engine across the gamut of players. They can leverage the ecosystem to improve their speed to market in bringing new AI capabilities to the market.

Potential risks and regulatory implications

Gen AI presents potential risks and adoption may be slow if the following are not considered when scaling:

- Malicious hallucinations and deep fakes, phishing and prompt injections, and ambivalent actors can expose the attack surface and erode customer trust.
- Gen AI is prone to mimicking biases and propagating discriminatory behavior if implemented without guardrails and continuous monitoring.
- Models will be trained on a corpus of proprietary and often private data, requiring regulatory compliance, node isolation, and source traceability.
- Customer servicing and engagement within insurance companies requires a heightened sense of empathy and softer human interaction skills, especially during claims processing. Overemphasis on AI-driven automation may result in a lack of human touch, potentially leading to reduced customer satisfaction and loyalty.
- Insurance regulators want oversight on insurers' AI models and expect insurers to manage AI risk. AI oversight activity at the state level is forging ahead, with laws in place or contemplated, to bulletins from insurance commissioners asserting authority under multiple state and federal laws.⁹

To mitigate these challenges, insurance companies should prioritize ethical AI development, leverage diverse and representative training data, evaluate and audit their AI systems on a consistent basis through a robust governance model, and maintain transparency in decision-making.

- Stay aware of ongoing legislation and guidance frameworks for compliance.
- Ensure regular surveillance and governance of AI systems (internally) and with vendors. Maintain strong oversight and communication with third-party vendors when using their AI models or outputs.
- Be ready to share information with customers in a transparent fashion when an adverse decision is made (e.g., higher rates, policy declination, etc.); respond to customer complaints and mitigate and address bias when identified.
- Construct a training regimen throughout the organization on Gen AI use.
- Ensure systems are flexible to incorporate new regulatory mandates as those are developed.
- Manage brand risk by making sure that seasoned marketing and communications executives are in the loop when Gen AI opportunities are being implemented.

How to get started

Whenever a transformative technology emerges, some organizations are spurred to experiment for the sake of its novelty, which can lead to “random acts of digital” that don’t deliver the anticipated return. Driving business results with Gen AI requires a strategy and collaboration from cross-disciplinary teams. In addition, with a technology that is advancing and maturing as quickly as Gen AI, avoid the temptation to go forward alone and instead find support and knowledge from partners, colleagues, and third-party organizations operating in this space.

- Educate the executive leadership team on the potential and risks of Gen AI to ensure a shared understanding and alignment on the path forward.
- Create a cross-functional multidisciplinary stakeholder group within the organization including the business leaders and relevant c-suite roles to develop an informed market response.
- Prioritize a set of use cases, especially targeting areas of the organization that will benefit the most from automation. Invest in use cases that have a clear return on investment.
- Lay out a clear technology strategy including data engineering and pipelines, MLOps tools, and AI-ready talent.
- Determine sources of competitive advantage, especially proprietary data, and begin curating these for the coming wave of Gen AI use cases.
- Proactively engage your ecosystem of advisers and partners to create a first-mover advantage and experiment with new solutions.
- Continuously monitor the regulatory landscape and implement guardrails for managing security and risk.



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