EBOOK

Insurance re-imagined in the cloud

A playbook for driving innovation, efficiency, and growth

Foreword

Rapid change and elevated volatility characterize today's insurance industry. Insurers must solve for rising customer expectations and changing buying patterns, growing competition from non-traditional players, relentless cost pressures, increased regulatory complexity, and an aging workforce. At the same time, technology innovation is advancing at lightning speed, and insurers know that they must find ways to harness it strategically, rapidly, and securely.

Forward-thinking insurers see opportunity—not adversity—in this time of historic change, and they're looking to two transformative technologies—cloud and AI—to help them hone their competitive edge and reinvent the future of their organization and industry.

Amazon Web Services (AWS) is at the forefront of innovation and helping insurers—from the largest global insurers and reinsurers to the fastest-growing InsurTechs—confidently and securely harness the power of these rapidly advancing technologies to drive business transformation and power growth. By leveraging AWS services and solutions from our global community of partners, insurers are becoming more efficient, increasing speed to market for new products, and harnessing data to deliver highly-personalized customer experiences, as well as make more informed business decisions.

We created this ebook to provide actionable insights based on our work with customers and partners in the insurance industry. We provide perspective on five critical business priorities for insurers and explore how they're using AWS cloud and AI services to find new opportunities to grow and thrive in a rapidly changing landscape.

Introduction

The insurance industry, by its very nature, is deliberate and risk averse. Evolutionary versus revolutionary change has long been the norm. Today, however, the market looks and feels different. Elevated customer expectations and a new competitive landscape fueled by rapid technology innovation—along with continued cost and regulatory pressures—are driving faster modernization and digital-led transformation.

Customer attrition: Customers want more and are willing to switch insurance providers

- 51% of life insurance policyholders feel underwhelmed by current product features[1]
- 27% of personal lines policyholders switched providers after two years[2]
- 5x more costly to acquire a new insurance customer than to keep an existing one[3]

Pricing pressure: Premiums are increasing to cover escalating costs, but it's not a sustainable strategy

- 6% annual increase from 1994–2023 in global inflation-adjusted insured losses from natural catastrophes—more than double the global GDP growth rate[4]
- 13% increase in US personal auto and homeowner premiums in 2023[5]
- 22% increase in US auto insurance between March 2023 and March 2024—the highest increase in any household expense category[6]
- 34% increase in UK auto premiums from 2022–2023[7]

Rising customer expectations vs. service stagnation: Customers expect more, and service improvements have not kept pace

- 44+ days is the average cycle time from first notice of loss to final payment—the longest since 2008[8]

Digital drivers: Digital is an imperative, and customers want more

- ~50% of customers intending to purchase insurance in the next 12 months say they'll do so online
- 30%+ of insurance customers are not satisfied with the digital channels available

1. Financial Services Top Trends 2025, Life Insurance, Capgemini, January 2025
2. World Property and Casualty Insurance Report 2025, Capgemini, 2025
3. A Customer-centric Business Model Unlocks Value for Insurers, Capgemini, 2023
4. Global Insurance Report 2025, Bain & Company, March 31, 2025
5. US Property & Casualty Outlook, Swiss Re, April 2024
6. U.S. Department of Labor Statistics Consumer Price Index, March 2024
7. Motor Insurance Premiums Continue to Rise as Insurers Battle Costs, ABI, January 31, 2024
8. 2025 U.S. Property Claims Satisfaction Study, J.D. Power, March 18, 2025
9. What Younger Consumers Want from Insurance, Society of Actuaries, April 25, 2023
10. Elevating Customer Experience: A Win–Win for Insurers and Customers, McKinsey & Company, September 21, 2023

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Regulatory complexity is on the rise: Especially around data and cybersecurity requirements

- General Data Protection Regulation (GDPR)
- Digital Operational Resilience Act (DORA)
- U.K. Critical Third Party (CTP) Regime
- Network and Information Systems Directive 2 (NIS2)

Competition intensifies as InsurTechs and other non-traditional players gain traction

- Giving customers more choice
- Disrupting traditional paradigms with new models, like usage-based and embedded insurance

The "Great Retirement" era begins

- Insurers need to do more with fewer people and attract a younger employee cohort to the industry
- Modernization is critical to accomplishing both
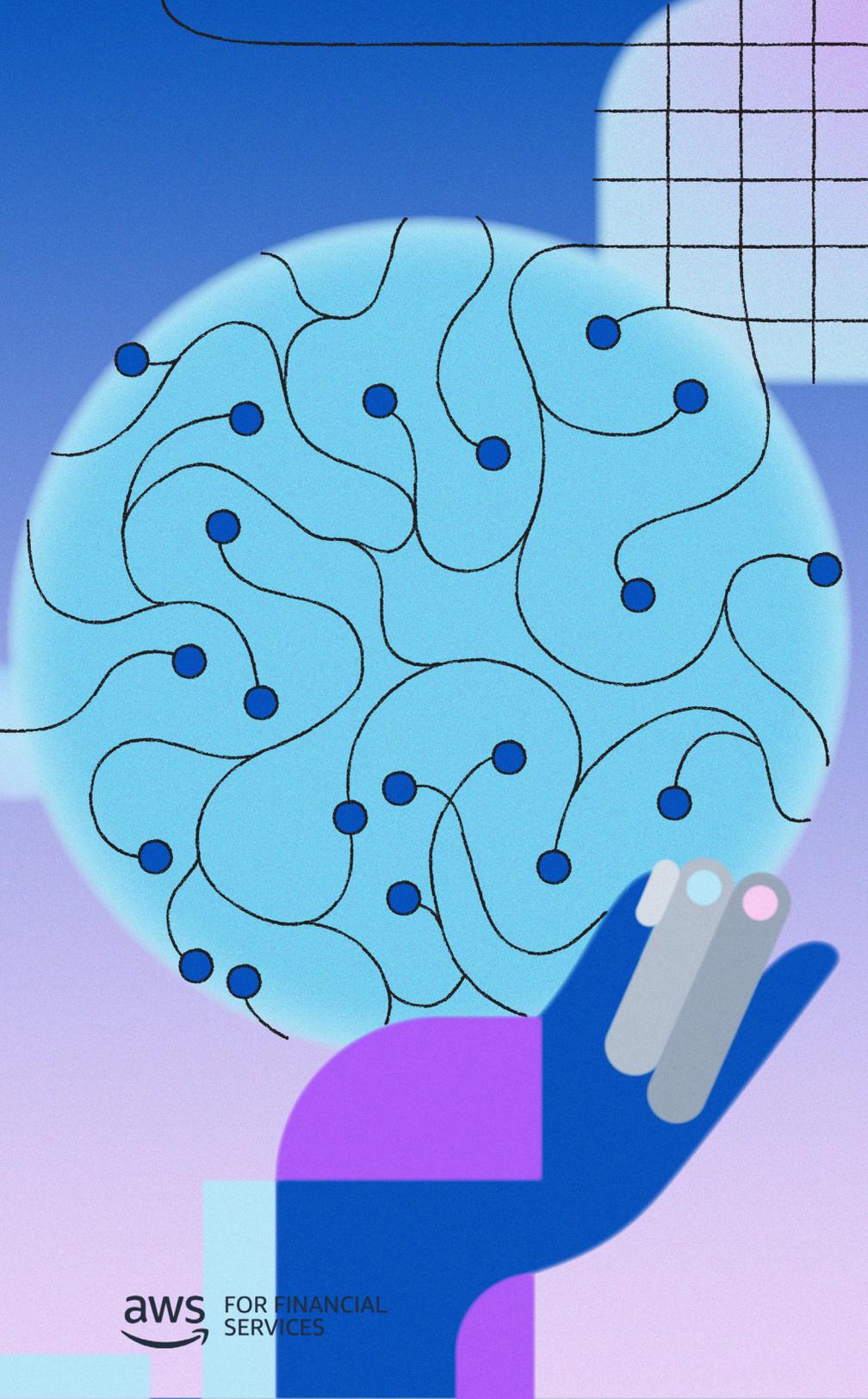
The path forward

As insurers set their sights on accelerating modernization, they're prioritizing two integral technologies: cloud and AI.

Insurers are leveraging the cloud to reduce the burden of their legacy estates, primarily for cost savings and increased agility. They're also using it to power insurance innovation and business growth, harnessing rich data and developing new digital products, experiences, and distribution channels.

With cloud-powered AI, the possibilities are endless, and insurers are beginning to implement first-generation AI technologies at scale. They're also eager to embrace next-generation AI, including generative and agentic technologies, to equip them to achieve new levels of service excellence, customer engagement, retention, and operational efficiency.

This ebook shows how AWS is working with insurers to lay the technology foundation they need to achieve some of their most critical priorities—and do so faster.

AWS leadership

- During the 18-month period ending in September 2024, AWS announced nearly 2X more machine learning (ML) and generative AI features into general availability than the other leading cloud providers combined.

- AWS invests at every layer of the AI stack, from AI assistants to foundation models to chips, with nearly 2X more production-ready capabilities than other cloud providers.

- AWS was the first cloud service provider to offer a diverse set of fully managed models from leading AI companies with the launch of Amazon Bedrock.

Expand digital capabilities and accelerate innovation with a modern architecture

Insurers are working to expand their digital capabilities to align with changing customer demographics and purchasing patterns. These capabilities are increasingly critical to meet evolving customer product and service delivery preferences, optimize productivity, drive down operational costs, capitalize on the potential of advanced AI, and scale on demand.

Core systems are central to digital transformation. They must be agile and flexible enough to develop, test, and scale innovative new products—from cyber and parametric insurance to embedded and usage-based insurance to simple life products that can be purchased online. They also need to capture more attributes, either directly from customers or indirectly from third-party data, to drive better ratings, as well as feed internal risk selection and portfolio management functions.

Legacy core insurance systems for underwriting, policy administration, billing, claims, document management, and customer communications were built as monolithic solutions, making them slow and difficult to adapt to new imperatives. Insurers are migrating to more flexible, scalable, microservices-based core platforms in the cloud, delivered by AWS Partners, for the speed and agility they require.

A microservices-based architecture delivers several important benefits, including accelerating development and deployment cycles, improving application maintenance and scalability, increasing resilience, and providing teams with the freedom to work independently, while at the same time collaborating and leveraging reusable code. Cloud-native core systems are built with microservices and offer rapid customization features that can be easily controlled and configured by different business teams to address fast-changing requirements. This enables insurers to take new products to market or update existing products more quickly.

AWS leadership

80%
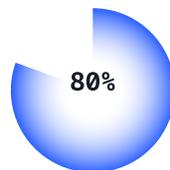
Amazon Q Developer can speed up a variety of tasks like feature development, unit testing, and refactoring by up to 80%.

How AWS enables

- **Mainframe migration and modernization**
  AWS helps insurers determine the best approach to migrate and modernize mainframes by incrementally moving workloads to AWS and/or by augmenting a mainframe with AWS cloud capabilities such as data and analytics.

- **Core system migration and modernization**
  AWS and its partners help insurers migrate servers, databases, and applications from an on-premises environment, hosting facility, or other public cloud to AWS and run cloud-native core solutions through a broad set of ISV partners. Or, insurers can develop new core applications natively using AWS serverless and other services.

Innovation in action

The Hartford

The Hartford, a leader in property and casualty insurance, group benefits, and mutual funds, used AWS Transform for .NET to kickstart the .NET modernization of its Skylynx vendor management application, a critical system for claims processing. It achieved 30% automated code transformation within weeks of initial adoption, laying the foundation for broader modernization efforts in the future.

Liberty Mutual INSURANCE

Liberty Mutual is embracing a serverless-first approach on AWS for new application development to become more agile and customer-centric while reducing costs. Building modern applications, including a serverless call center, on AWS enables Liberty Mutual's customers to easily interact with the company at any time and process claims automatically in as little as four minutes.

AXA

AXA Konzern AG migrated its msg.Life Factory policy administration system to AWS, using Amazon Elastic Compute Cloud (Amazon EC2), Amazon Simple Storage Service (Amazon S3), and other AWS services. The industry-first migration transformed the company's batch processing system—enabling it to process batches approximately 25 percent faster. It also freed developers of maintenance duties, allowing them to innovate and adopt continuous integration and continuous deployment (CI/CD) principles.

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Now, instead of taking many months, creating a new server instance takes an hour. Our developers can define the variables in code and instantly deploy a new environment. We can have test environments on demand. If something doesn't work, we just shut that instance down.

— **Marcus Weinert**
   IT area lead protection and savings/life run,
   AXA Germany

Deliver more personalized, curated experiences and optimize moments that matter

Consumers today expect their financial services experiences, including those with their insurance providers, to measure up to those in other areas of their daily lives. For example, they expect hyper-personalized product recommendations when shopping online as well as immediate pricing quotes, and sometimes even same-day product delivery.

Insurance providers often continue to struggle to meet present-day expectations for highly personalized experiences efficiently and effectively at scale. And, they must carefully balance personalization efforts with robust security measures and complex regulatory requirements.

Insurers face three critical challenges in delivering personalized experiences while operating in a highly regulated environment: scaling customer support across multiple channels while maintaining quality, providing real-time, personalized assistance and recommendations that balance automation with the human touch, and ensuring regulatory compliance and security while enabling AI innovation.

AWS leadership	**>1,000** models available in Amazon SageMaker

How AWS enables

- **Hyper-personalized marketing content**
  AWS services, including Amazon Personalize, AWS Entity Resolution, Amazon SageMaker, and AWS Clean Rooms, enable insurers to create highly personalized marketing content and offers based on structured and unstructured data from consumer profiles and community insights.

- **Customer 360-degree views**
  AWS, through services such as Amazon SageMaker, AWS Entity Resolution, AWS Clean Rooms, AWS Glue, Amazon API Gateway, and Amazon Personalize, helps insurers build AWS data lakes and leverage AI and ML tools to build 360-degree customer views, inclusive of all sentiments and interactions, to better understand behaviors and insurance needs.

- **Contact center optimization**
  Leveraging services like Amazon Connect and Amazon Lex, along with industry-leading AWS AI and ML services, insurers can create efficient and highly personalized customer service calls and offer self-service in the customer's channel of choice.

Innovation in action

Principal

[Principal Financial](#) implemented [Amazon Q Business](#) and gained the ability to seamlessly blend human and AI interactions to provide personalized, efficient customer service at scale. It reduced the time required for users to respond to client inquiries and requests for proposals by 50 percent.

canada life™

[Canada Life](#) implemented [Amazon Q Developer](#) to address API security vulnerabilities as it migrated to the cloud. It reduced the time needed to upgrade and remediate the security vulnerabilities and boosted productivity by 40 percent.

Reinvent how employees work

Boosting productivity is critical as the industry enters the era of the "Great Retirement" and insurers continue to experience significant cost pressures that demand new levels of operational efficiency. Intelligent automation is the path forward—it accelerates processes and reduces costs, supports straight through processing, and enables employees to focus on higher-priority initiatives. And, today it can do all this while improving the customer experience with faster, more personalized services delivered via a customer's preferred channel.

Agentic workflow and process automation represent a transformative opportunity for insurers looking to enhance operational efficiency and customer experience while maintaining strict security and compliance standards as diverse as GDPR, DORA, Health Insurance Portability and Accountability Act (HIPAA), and Payment Card Industry Data Security Standard (PCI DSS), to name just a few.

Agentic capabilities refer to role-based generative AI agents that specialize on a specific task or objective, such as orchestrating income verification for a disability income policy application or fraud detection, and act autonomously to determine the best way to complete the task. Agentic workflows are proactive, intelligent, and adaptive in responding to customer needs, empowering the system or agent to guide customers through their interactions efficiently and safely.

Through Amazon Bedrock's agentic framework, including Amazon Bedrock AgentCore, organizations can rapidly harness and scale the power of agentic AI to orchestrate specialized agents that handle complex workflows—from document analysis to customer service automation—while ensuring security with built-in controls and compliance features. This represents a fundamental shift from rigid, rules-based automation to intelligent, agile systems that can handle sophisticated processes.

| AWS leadership | 100% | of generative AI performance with Amazon Nova |
| | 25% | of the cost |

How AWS enables

- **Claims automation**
  AWS helps insurers leverage generative AI, ML, and other AWS services, including Amazon Connect, Amazon SageMaker, Amazon Bedrock, Amazon Bedrock Data Automation, and Amazon Rekognition, to streamline the insurance claims experience from first-notice-of-loss through settlement, and further into prevention.

- **Digital underwriting assistant**
  Insurers can use various AWS services, such as Amazon SageMaker, Amazon Bedrock, Amazon Bedrock Data Automation, Amazon Quick Sight, Amazon Nova Pro, and Amazon API Gateway, to power automated underwriting assistants that collect and summarize documents and compare them to "standard" applications to identify outliers and accelerate processes.

- **Digital policyholder concierge**
  With AWS services, such as Amazon Bedrock, Amazon Connect, Amazon Lex, AWS AppSync, and Amazon CloudFront, insurers can build and deploy digital policyholder concierge services that enable more personalized policyholder engagement, self-service, and guidance with multi-lingual support.

Innovation in action

Sun Life

Sun Life created Sun Life Asks, a generative AI internal chatbot, to support its global workforce's everyday tasks and increase internal productivity. The innovative solution, which leverages Amazon Bedrock, enables the company's 30,000 employees to use generative AI to answer more than 10,000 questions weekly to support their daily work—saving them time they can reinvest in higher-value tasks that deliver client impact. Sun Life also uses Amazon Q Apps to enable enterprise users to quickly turn their ideas into apps by describing in natural language the app they want to build.

See it in action

Claims modernization: Learn how AWS generative AI services can extract data from documents to accelerate the insurance claims process.

Learn more →

Medical record analysis: See how a document analysis and question-answering system for insurers, powered by AWS services, can streamline extraction of relevant information from medical documents and provide intelligent question-answering capabilities to increase productivity, reduce errors, and improve customer satisfaction for medical insurance companies.

Learn more →

Unleash distribution innovation

For many insurers, the sales journey across channels (direct-to-consumer, producer-led, affinity partners, etc.) remains a highly manual process assisted by technology at isolated, inconsistent points. The result is a fragmented, frustrating customer experience, which further erodes an already low level of customer loyalty in the insurance industry. And while many customers would prefer direct distribution, often insurance products are perceived to be too complex to be sold via this channel. In addition, in an industry in which half of companies' products are distributed via third-party brokers, insurers often end up with a filtered view of customer needs.

The shift in customer expectations is driving insurers to reimagine the distribution landscape. While insurers continue to mix and match between digital and traditional models, there is increased focus on moving to direct channels and expanding the use of digitalized services. The end goal is to improve the customer experience by delivering a seamless and frictionless experience, whether through an insurer's own channels, third-party insurance distributors, or brand new channels outside of the industry.

Build the foundation for a comprehensive platform

A comprehensive distribution solution needs to support all distribution channels
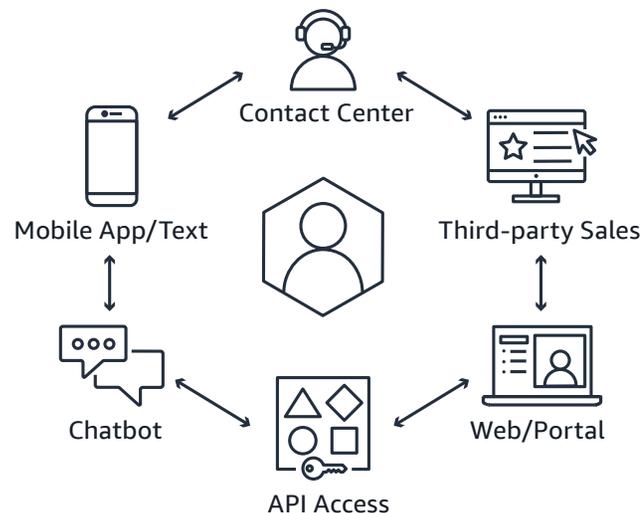
Direct-to-consumer

Producer-led

Third-party service providers

Customers need to be supported seamlessly across engagement channels

Each distribution solution needs an API ecosystem to connect with external partners

Contact Center

Mobile App/Text

Third-party Sales

Chatbot

Web/Portal

API Access

How AWS enables

- **Support for the direct-to-customer channel**
  AWS Services, including Amazon Personalize, Amazon Connect, Amazon Bedrock Agents, and more, enable insurers to optimize marketing segmentation and campaign delivery, followed by direct sales, service, and claims capabilities in a customer's channel of choice.

- **Digital service expansion**
  AWS AI, ML, and other core services, including Amazon Bedrock and Amazon Textract, enable insurers to power next-generation digital applications and self-serve portal experiences, as well as intelligent document processing.

- **Simplified integration and data sharing**
  AWS services, including Amazon API Gateway, Amazon CloudFront, AWS Lambda, and Amazon DynamoDB, help insurers efficiently share data among partners to enable embedded and affinity offerings.

Innovation in action

Palantir

Palantir, an analytics company that is an early adopter in applying multimodal AI to insurance, is pioneering next-generation insurance quoting with Amazon Nova Pro. It can process multiple data types simultaneously, analyzing documents, images, and historical data while automatically evaluating submissions against underwriting guidelines.

NEW YORK LIFE

New York Life looked to gain a competitive advantage by reducing by a month the amount of time required to issue a new life insurance policy. It developed a pilot with AWS that uses Anthropic Claud on Amazon Bedrock to generate a comprehensive summary of an applicant's health—featuring full references to an explanation of the underlying facts. With this approach, New York Life expects to significantly reduce the time to review, approve, and determine a premium for a life insurance policy.

Optimize ability to leverage a growing universe of data

Data is the lifeblood of every modern financial institution and can be used to create a powerful competitive edge. This might include achieving better rating and pricing models, accelerating product innovation, evolving customer segmentation and risk assessments, conducting better fraud analytics, facilitating compliance, and more quickly and efficiently evaluating and paying claims.

To achieve this potential, however, insurers must turn data into insights, and enable this capability enterprise wide, freeing it from the confines of IT and analyst teams. While insurers recognize the power of generative AI to make data and insights truly accessible, they continue to struggle to leverage it at scale.

By implementing integrated AI and analytics services like Amazon Bedrock with natural language capabilities and Amazon Q in Amazon QuickSight, organizations can transform their data into AI-ready assets that knowledge workers can analyze through simple conversational queries. This democratized approach to analytics empowers organizations to make data-driven decisions faster and more effectively across all levels of technical expertise, while maintaining enterprise-grade security and compliance standards.

AWS leadership	10X FASTER	Amazon Q in QuickSight scenarios enables business users to perform complex data analysis up to 10x faster than spreadsheets.

How AWS enables

- **Underwriting and risk analysis**
  AWS helps insurers leverage third-party data and use generative AI, ML, and other AWS services, including Amazon Bedrock, Amazon Textract, and Amazon Rekognition, to improve risk selection, accelerate underwriting, and enable straight-through processing.

- **Claims analysis and fraud detection**
  AWS ML, AI, and generative AI services, including Amazon SageMaker, Amazon Entity Resolution, Amazon Bedrock, and Amazon Textract, empower insurers to improve their ability to understand what types of claims are submitted and analyze them for fraud—reducing risk and facilitating compliance.

- **Embedded insurance**
  Insurers can leverage services like Amazon API Gateway and Amazon Clean Rooms to share and consume data with external partners, and use AWS database and serverless services to scale cost-effectively to meet demands from partners.

- **Usage-based insurance**
  Insurers can deploy AWS IoT and other data and analytics services to power vehicle telematics and deliver usage-based insurance—driving product differentiation and a competitive advantage.

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Innovation in action

agroseguro

Agroseguro, Spain's leading agricultural insurance management entity, wanted to transform its fraud detection capabilities amidst rising weather-related claims and increasing regulatory complexity. It required a solution that could automate document understanding while enhancing fraud prevention—all within strict compliance requirements. Agroseguro used Amazon Bedrock's generative AI capabilities to automate the understanding and processing of technical and legal documents, reducing manual effort in legal document processing by more than 30 percent while significantly enhancing its ability to detect and prevent insurance fraud. The solution also established a foundation for continued innovation in fraud prevention and document processing.

TRAVELERS

Travelers Insurance revolutionized its email classification process using generative AI capabilities from AWS. Faced with the challenge of manually processing thousands of insurance-related emails daily, Travelers developed a sophisticated classification system that automatically categorizes incoming emails into specific insurance types and claim categories, significantly reducing manual processing time. By leveraging foundation models through Amazon Bedrock, Travelers achieved over 95 percent accuracy in email classification while maintaining strict security and compliance requirements. The solution processes emails in real-time, extracting key information and routing them to appropriate teams for faster response times. This AI-driven transformation has not only improved operational efficiency but also enhanced customer service quality.

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Technological innovation and digitalization have always been a fundamental strategic pillar in our business, becoming even more relevant in a context like the current one. AWS not only offers us a safe and open environment to continue innovating, but it has also opened doors to the exploration of emerging technologies as promising as generative AI.

**— Manuel Rodriguez
    CIO, Agroseguro**

Innovation in action

SBI Life Insurance

SBI Life Insurance used generative AI capabilities from AWS to build a document search solution to retrieve procedural documents on insurance products and policies, launching the capability at its call centers. The solution also features a selfbot for quicker customer support and faster operator training. The new search system significantly improved call center operations, empowering operators to answer quickly and reducing stress. It also shortened the operator training period by approximately 30 percent.

See it in action

Underwriting digital assistant: See how generative AI can extract unstructured data from insurance forms, enrich the data, summarize the information, and provide coverage recommendations.

Learn more →

Know Your Customer process (KYC) and fraud detection: Learn how Amazon Bedrock can streamline document extraction, classification, and review, while accounting for a financial institution's specific policies, during the KYC process.

Learn more →

Secure by design: Proven security to accelerate innovation

At AWS, security is our top priority. AWS is architected to be the most secure global cloud infrastructure on which to build, migrate, and manage applications and workloads. This is backed by the trust of our millions of customers, including the most security sensitive organizations like government, healthcare, and financial services.

Architected to be the most secure cloud infrastructure

Build, run, and scale applications on infrastructure architected to be the most secure cloud computing environment available today. As insurance organizations migrate and build on cloud, they need assurance that they have a secure foundation. AWS has the most proven operational experience of any cloud provider. Our cloud infrastructure is highly trusted and secure-by-design, giving customers the confidence to accelerate innovation.

Our core infrastructure is built to satisfy the rigorous security requirements for the military, global banks, and other high-sensitivity organizations, such as insurance companies. We deliver a deep set of cloud security tools, with over 300 security, compliance, and governance services and key features, and our infrastructure supports 143 security standards and compliance certifications, including PCI DSS, CSA STAR Level 2, ISO 22301, 27001, 27017, 27018, 27701, GDPR, FIPS 140-2, NIST 800-53, and Cybersecurity Framework (CSF), among others. AWS supports more security standards and compliance certifications than any other cloud provider, which is critical for highly regulated insurers.

We also provide a wide variety of tools, resources, best practices documents, and other guidance that insurers can leverage in delivering application-level security measures and ensuring compliance, including the AWS Compliance Center, AWS Security Document Repository, the Financial Services Industry Lens for the AWS Well-Architected Framework, and the AWS Artifact Tool, a globally available customer portal that provides on-demand access to information on AWS policies, processes, and controls.

Security automation that drives speed and agility

Move fast and stay secure by confidently integrating and automating security into every part of the insurance enterprise. Building securely should be the path of least resistance—with no tradeoff between security with speed. With security automation, teams spend their limited time on the highest-value tasks, reduce human error, and scale security best practices across the organization.

End-to-end security and guidance

Innovate with a wide portfolio of security services and partner solutions to help achieve end-to-end security. Insurers require powerful capabilities, designed and built by experts, which encode years of experience, knowledge and best practices, all available at their fingertips.

Digital Sovereignty: More control, more choice

At AWS, we have always believed that for the cloud to realize its full potential it is essential that our customers have control over their data and choices for how they secure and manage it in the cloud. We give our customers the flexibility to choose how and where they want to run their workloads.

The AWS Digital Sovereignty Pledge is our commitment to offering AWS customers the most advanced set of sovereignty controls and features available in the cloud. We've committed to expanding our capabilities to allow organizations to meet their digital sovereignty needs, without compromising on the performance, innovation, security, or scale of the AWS Cloud.

Learn more about digital secure by design

Security, Identity & Compliance | AWS Architecture Center

AWS Cloud Security content | Amazon Web Services

AWS Security Blog - Amazon Web Services, Inc.

Conclusion

The rapid change and operational challenges facing insurers today do not have to stifle innovation and growth. Instead, these developments can create powerful opportunities for insurers that have prepared and invested in modernizations—specifically cloud and AI. These technologies are proving themselves to be powerful strategic enablers that equip insurers with the capabilities and agility to accelerate digital innovation across products and distribution, deliver hyper-personalized services, and introduce and optimize intelligent automation to achieve new levels of operational efficiency.

AWS is helping insurers—across the life, health, and property and casualty sectors—to successfully navigate these challenges and confidently pursue new opportunities on the horizon. Our cloud and AI services and the solutions provided by our community of partners help insurers move confidently through their transformations to modernize core systems, harness data, and leverage AI and other emerging technology to create new ways of operating and delivering insurance. And, we empower insurers to address these priorities in managed and controlled increments, reducing risks and speeding time to business impact.

Ready to explore how AWS can accelerate your insurance transformation?

Contact your AWS account team or visit AWS solutions for insurance industry to request a complimentary cloud readiness assessment. You can also join AWS insurance customer briefings to see architectures and roadmaps, and explore our AWS Financial Services Competency Partners.