

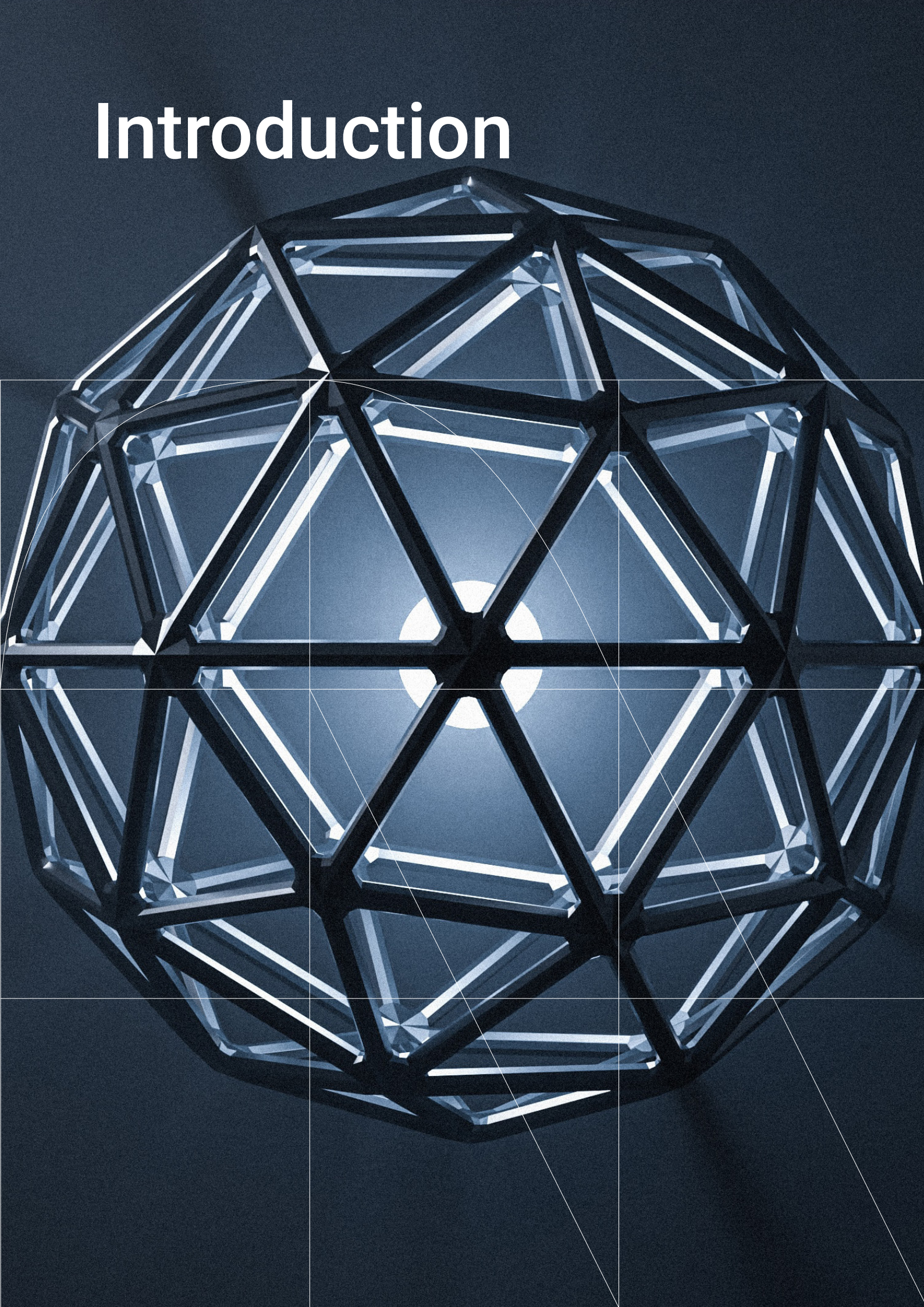
Revolutionizing Insurance Through the Power of Data and AI

Thought Leadership

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Introduction



General Global Move on Data and AI: Where Is Insurance?

It is imperative to acknowledge that insurance has significantly benefited from technological advancements and digital transformations globally. Large volume of data and Artificial Intelligence are leading a transformative wave in insurance distribution. Insurers who swiftly grasp the opportunity can bolster their business value through cost-effective measures—securing a large share of the market.

The evolving landscape of AI implementation is empowering insurance companies to strategically position products, identify target consumers, and effectively harness data for market penetration. This paper aims to offer a comprehensive analysis, delving into the profound impact of AI on the insurance ecosystem and the strategic business landscape.

Allstate, an insurance company, has recently introduced a novel approach to leverage real-time data from its customers, enhancing the underwriting process through simplification. The implementation of personalized feedback and educational programs through data assisted drivers in identifying their risky driving habits. A study conducted by CMT, encompassing 10,000 drivers, revealed that increasing driver awareness of hazardous driving practices led to a notable 25% reduction in driver distractions. Furthermore, the study also demonstrated that the provision of driving feedback resulted in a significant 30% decrease in hard braking¹.

By integrating data and AI across different aspects of the insurance value chain, companies can unlock new opportunities, optimize processes, and ultimately provide more value to their customers. Despite the wide range of potential applications, the deployment of AI in insurance firms is not yet widespread. Only 43% of insurance companies have currently implemented AI for any application within their organizations. However, this does not imply a lack of plans. In fact, 92% of executives have already initiated or are planning to incorporate AI within their organizations².

Market Size for Analytics In Insurance

The market potential for Data and Analytics appears to be immensely promising. According to Fortune Business Insights³, the worldwide Insurance Analytics Market was worth \$11.11 billion in 2022, and it is expected to experience robust growth, reaching \$12.65 billion in 2023 and further expanding to a substantial \$35.00 billion by 2030. This growth represents a noteworthy compound annual growth rate (CAGR) of 15.6% throughout the forecast period.

Magic Quadrants

Nowadays, enterprises have recognized the benefits of the Magic Quadrant method, enabling them to optimize their investments more effectively. Furthermore, the utilization of prebuilt intents and flows empowers enterprises to address diverse requirements across various business functions swiftly. Leading vendors have embarked on developing more inclusive application marketplaces, allowing enterprise buyers to procure specific applications, thus enhancing the overall versatility of the platform⁴.

The surge in the adoption of AI and data flows has given rise to three key areas of emerging functionality:

- Language-portfolio-centric approaches, where vendors offer disaggregated natural language functionalities, including advanced insight and search capabilities, as well as models for natural speech generation.
- Business-automation-centric strategies, where vendors provide prepackaged automation solutions for various enterprise processes, such as HR or ITSM workflows, particularly catering to high session volumes.
- User-experience-centric methodologies, where vendors integrate analytics of customer data and behavior models to deliver personalized experiences. This includes the incorporation of sentiment analysis and next-best-offer tool integrations, fostering a more tailored and engaging user experience.





What Constitutes Insurance Data?

Unstructured Data, Data In Silos, Insufficient Data

Property, Web and Third-Party Data

By closely monitoring risk data, stakeholders can make informed decisions and strategies to meet the demands of P&C insurance. For instance, property data, encompassing comprehensive information on property transactions and pricing trends, serves as a crucial parameter for understanding the price shifts within the housing market.

Web data, particularly news updates sourced from diverse online platforms, offers a multifaceted perspective on global events, current affairs, and emerging trends across various industries. This diverse information pool aids businesses and individuals in understanding the latest developments, enabling Insurtech companies to develop embedded insurance and know the changing world and their clients better.

Leveraging third-party datasets for the training of AI models is crucial, especially in ensuring the development of robust AI systems while upholding privacy standards. By incorporating large, diverse datasets sourced from reputable third-party providers, AI models can be trained systematically, enabling them to yield accurate results while maintaining the utmost confidentiality and privacy protection for the individuals involved, facilitating the underwriting process.

Unstructured Data, characterized by its irregular and disorganized nature, poses significant challenges for digital management and analysis. Unstructured data can manifest in various forms, including paper documents, videos, emails, and online chats, serving as essential components in tracking client relationships, agent interactions, commission records, carrier information, and group-related data. Many insurance companies aiming to integrate AI often overlook the prerequisite of consolidating all their unstructured data into a cloud system and effectively leveraging AI for data extraction.

Data In Silos refer to a repository of data controlled by a particular group that remains challenging to access fully or easily by other groups within the same organization. Various departments, such as Finance, Administration, HR, and Marketing, require distinct sets of information to facilitate their respective functions. With the expansion of both the quantity and diversity of data assets, data silos tend to proliferate within an organization.

Insufficient Data refers to incomplete data where AI can be used to generate synthetic data to fill the gaps. It might necessitate its own set of security controls, leading to redundant efforts and an increase in administrative expenses. Additionally, this fragmented structure can render the data susceptible to various malicious activities, such as cyber-attacks, hacking attempts, and fraud actions in the insurance industry.

Financial Data

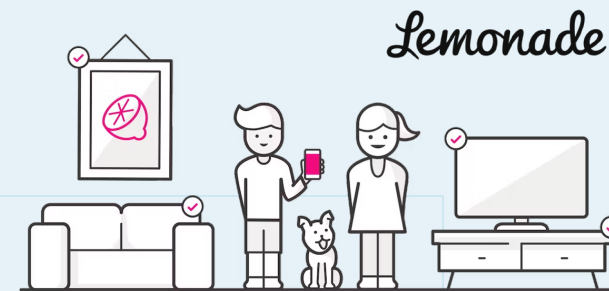
Financial data refers to a collection of information that provides a comprehensive understanding of an organization's financial health. Through regular reporting, these datasets assist insurers in thoroughly evaluating the performance of companies, enabling them to tailor plans based on specific requirements while considering associated risks⁵.

Lemonade, for example, leverages claims and risk data to generate financial data. Through the application of AI, it streamlines the claims process by swiftly reviewing claims, cross-referencing them with policies, employing 18 anti-fraud algorithms, and facilitating secure transactions by issuing wiring instructions to the bank. Notably, Lemonade notifies the customer about the closed claim in a remarkably brief three-second timeframe.

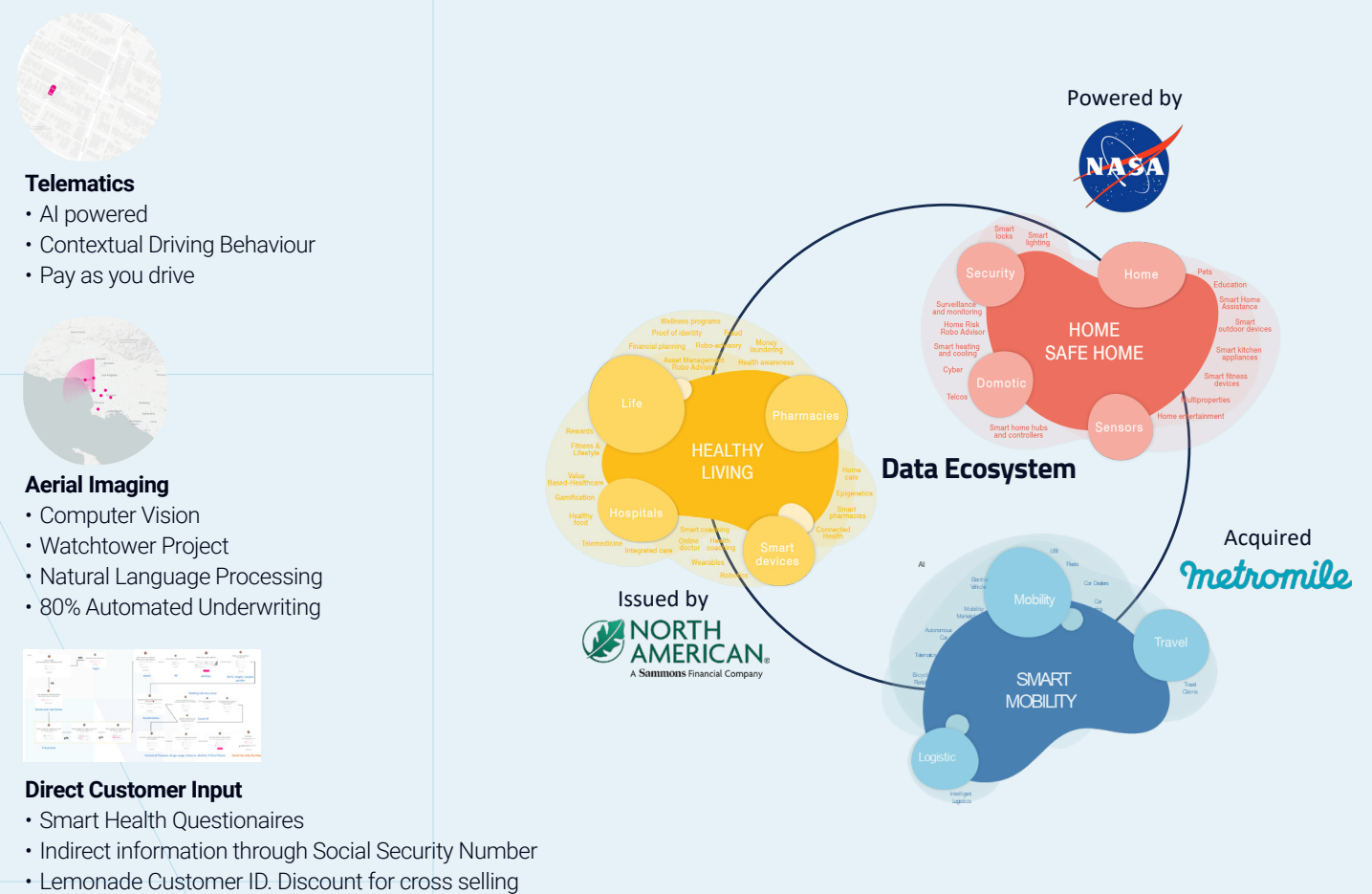
Moreover, data plays a pivotal role in financial services, facilitating:

- Consumer analytics and insights for insurance companies
- Real-time analytics and marketing
- Risk assessment and management
- Fraud detection and prevention
- Customer segmentation and targeted marketing
- Predictive analytics and budget planning
- Financial market and investment analysis
- Regulatory obligations and reporting

Lemonade: Data and Marketing Expenditure



Lemonade data ecosystem is formed by data collected from auto, questionnaires and satellite monitoring. The company uses **86% of its marketing expenditure based on AI predictions and the LTV Model**



Source: NTT Data Insurtech Case Study of Lemonade, 2023

Weather Data

Climate change is the top long-term risk among the global top 10 emerging risks, according to the World Economic Forum's Global Risks Report 2023⁶. The average global temperature on Earth has increased by at least 1.1°C since 1880. Since 1999, the Chicago Mercantile Exchange has facilitated the sale of weather and agriculture derivatives, enabling clients to safeguard themselves against price fluctuations and indirect exposure to natural disasters. Moreover, the market has extended its offerings to include Catastrophe bonds and other Insurance-Linked Securities, providing insurance alternatives with tools to manage climate-related risks. This demonstrates the industry's proactive approach to addressing emerging challenges.

- 1. Flood** FloodFlash and Munich Re announced a new partnership to fuel parametric insurance in the U.K. and international growth.
- 2. Crop Protection** Munich Re and Farmers Edge to collaborate on parametric weather insurance solutions
- 3. Flood** Neptune Flood, the first AI-driven flood insurance company to provide faster, easier, and better flood insurance, partnered with SIAA, the nation's largest independent insurance agency alliance.
- 4. Drought** Brazil's National Institute of Meteorology, INMET, partnered with Swiss Re and Mitsui Sumitomo to develop a new parametric weather insurance solution in Brazil.
- 5. Food Crisis** Area Yield Index Insurance (AYII) is being implemented in Nigeria by Heifer International in collaboration with three other organizations: PULA, OLAM, and Leadway Assurance Limited.

6. ML and Big Data AXA Climate and SatSure partnered for global parametric risk transfer solutions.

7. AI and Blockchain Igloo launched blockchain-based weather index insurance for rice farmers in Vietnam.

8. AI and ML Swiss Re, acting as the sole reinsurer, and insurers People's Insurance Company of China (PICC), Ping An, and China Pacific Insurance Company (CPIC) collaborate to offer parametric catastrophe insurance in Guangdong.

9. Radar Satellite Swiss Re announced a strategic partnership with radar satellite-based flood monitoring provider ICEYE, which will provide Neptune Flood with high-resolution flood hazard data in the immediate aftermath of a flood event.

Descartes Underwriting, founded by seasoned insurers and data scientists, provides parametric insurance solutions globally, covering natural catastrophes across diverse sectors in more than 60 countries. With policies underwritten on A-rated securities and strategic partnerships with top-rated (re)insurers, Descartes can deploy up to \$200 million in capacity per contract. With a client base exceeding 200 entities and a mid-size ticket of \$100+ million, Descartes exhibits a robust market presence. This signifies the company's capability to broaden its Insurtech outreach across multiple regions, thereby enhancing its capital potential .

Descartes prioritizes in-depth risk understanding and invests in technologies that transcend conventional Climate Risk coverages. The company's strategic investments align with the evolving landscape, en-

Insurers and Insurtechs Are Taking Action Around the World



Source: NTT Data Insurtech Global Outlook, 2023

Municipality Data

ensuring it remains at the forefront of innovation in the insurance domain. Insurance weather API furnishes insurers with real-time data on various weather parameters across diverse geographical locations. Leveraging this API enables insurers to gain valuable insights into customer behavior in relation to weather-related risks. This not only aids in reducing claim expenses but also bolsters overall profitability by stimulating sales volumes.

Municipalities are currently facing escalating risks that necessitate collaborative efforts with insurance companies to address security concerns within their respective regions. Leveraging municipal data, which encompasses crime rates, cyber-attack statistics, extreme weather predictions, and transportation data, through advanced data analytics can facilitate real-time city management. This approach also holds relevance for the insurance industry, aiding in the processes of underwriting and claims management in the event of accidents. The primary goal is to fortify insurance companies to effectively navigate the increased uncertainty stemming from both climate change and security issues.

As an example, PROCERGS in Brazil established a public safety innovation working group and a governance structure focused on data-driven decision-making to enhance the efficiency of public safety measures. It developed the Statistical Security Management application (GESeg) to conduct data analysis on temporal and spatial data from the 23 municipalities, prison systems, and courts of Rio Grande do Sul. This initiative integrated 20 databases encompassing the public safety ecosystem, which includes law enforcement, the prison system, courts, education, health, finance, and traffic systems, into a unified data lake that supports public safety and justice throughout the state. Furthermore, AI models were trained to furnish law enforcement agencies with trend data and predictive analyses, thereby supporting their digital transformation through decision intelligence.

Social Data

Social data is gathered from the public online activities of users across various social media platforms. This data encompasses a wide range of information, including images, text, location details, and biographical data, as well as shared and reposted links. For insurers, social media data presents an opportunity to access additional insights into a customer's real-time risk exposure. AI tools, integrated with machine learning algorithms, can efficiently collect textual and visual consumer data, enabling the rapid construction of predictive models surpassing the capabilities of human agents. These predictive models allow underwriters to obtain a comprehensive assessment of an insured individual's risk level.

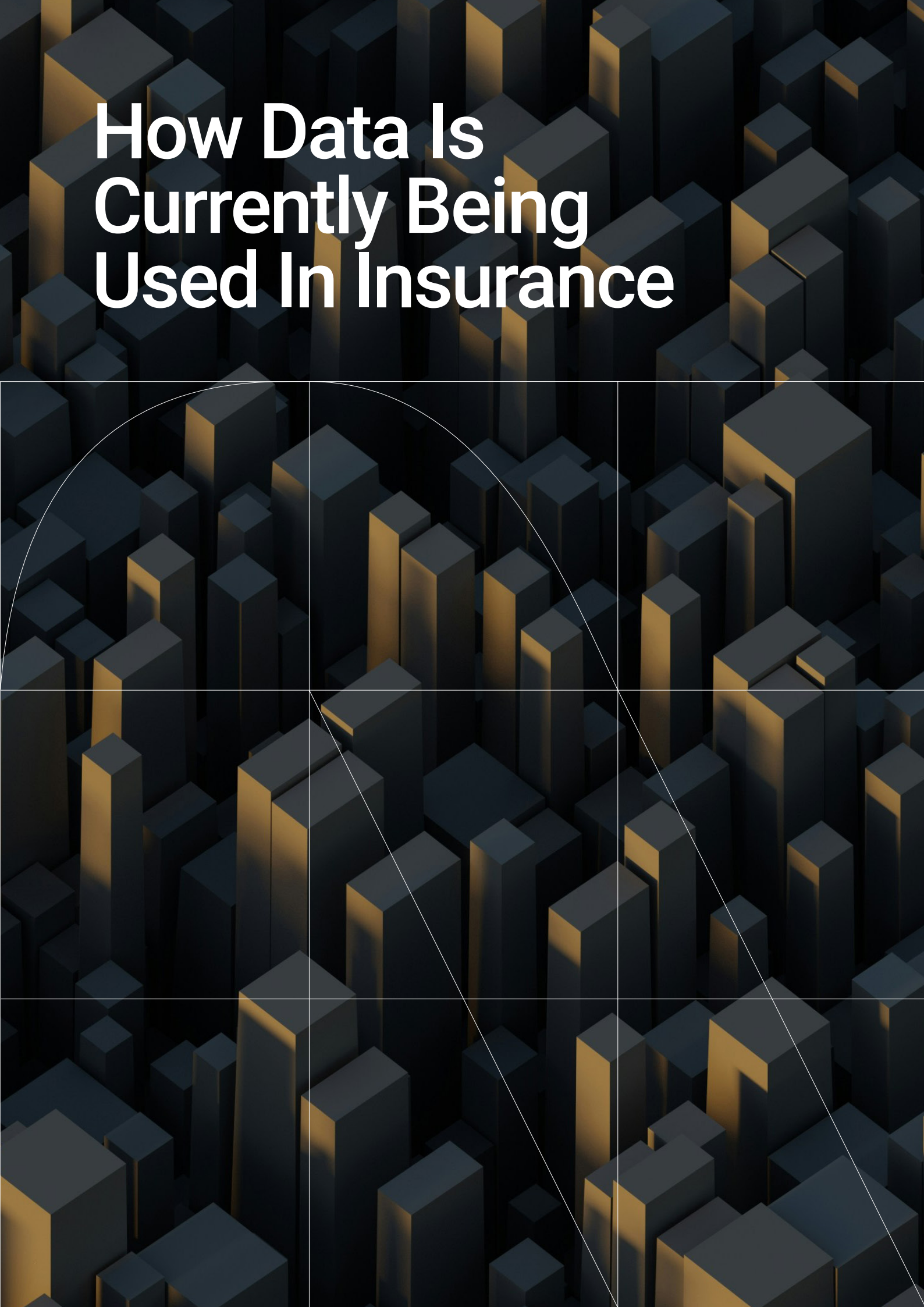
Moreover, sentiment analysis, supported by Natural Language Processing (NLP), serves as a machine learning technique for analyzing and interpreting text. By operating at scale, sentiment analysis can process large volumes of written user information to evaluate a client's behavior. For instance, it can scrutinize and aggregate data from a business's review section, identifying and highlighting any potential risks that warrant further investigation.

Analyses voice and communications rate aid in identifying vulnerable customers. For instance, it can scrutinize and aggregate data from a business's review section, identifying and highlighting any potential risks that warrant further investigation, including spotting and attending to vulnerable customers through voice analysis.

ISO Vehicle Data

ISO vehicle data serves as the Property & Casualty (P&C) industry's primary resource for analyzing claim attributes, encompassing repositories of bodily injury, property damage, and automobile claims histories. Additionally, ISO data integrates an Internet portal for third-party data, including police reports, medical records, and public records. The vehicle data system built an ecosystem with players in mobility, travel, and logistics⁸.

Verisk collaborated with ISO's Insurance Information Exchange unit, renowned as the leading provider of motor vehicle reports within the industry. Through strategic partnerships with key data providers, this service offers expedited access to state driving-record databases, furnishing crucial property and auto underwriting information to over 20,000 insurance agents nationwide. Insurers can utilize the platform to submit orders for driver's license numbers, with the system promptly generating a comprehensive report on the individual's driving history and detailed information. Moreover, insurers can access the platform to receive real-time status updates as the system processes their orders.



How Data Is Currently Being Used In Insurance

AI has emerged as one of the most influential and critical technologies for insurance companies, enabling the execution of new business models and fostering innovation. To establish themselves as modern enterprises, insurers must prioritize the utilization of data and cloud systems.

While adoption rates may vary, there is substantial evidence indicating the swift integration of AI in both life and Property & Casualty (P&C) insurance sectors. Notably, the Gartner Data and Analytics for Digital Transformation Survey at the end of 2022 reveals that nearly the entire industry (83%) anticipates incorporating AI into their operations by 2025⁹. For insurers yet to invest in AI, it is crucial to identify several use cases that can facilitate support for AI implementation. Additionally, they should explore AI solutions tailored to address specific business challenges, such as fraud detection, instead of developing in-house solutions. Furthermore, addressing talent-related concerns and constructing a comprehensive AI roadmap that incorporates key performance indicators (KPIs) to measure the business impact of AI are essential steps in the integration process.

Through concentrated attention and strategic organization in these specific domains, insurers can establish an enterprise that facilitates streamlined operations, the introduction of pioneering products, enhanced user and customer experiences, and amplified revenue and profitability. These interconnected domains represent the foundational principles in the establishment of a data-centric insurtech enterprise¹⁰.

Claims Processing: AI-powered systems streamline the claims process by automating claims filing, processing, and settlement, reducing the time taken for resolution and improving overall customer satisfaction.

Customer Experience: By leveraging customer data and AI-driven insights, insurance companies can enhance their customer service, personalize interactions, and provide seamless and efficient support throughout the customer journey.

Underwriting and Pricing: Data analytics and AI tools enable insurers to assess and underwrite policies more efficiently, leading to more accurate pricing and reducing the potential for underwriting risks.

Fraud Detection: AI algorithms help in detecting and preventing fraudulent activities by analyzing large sets of data, identifying suspicious patterns, and enhancing overall security measures.

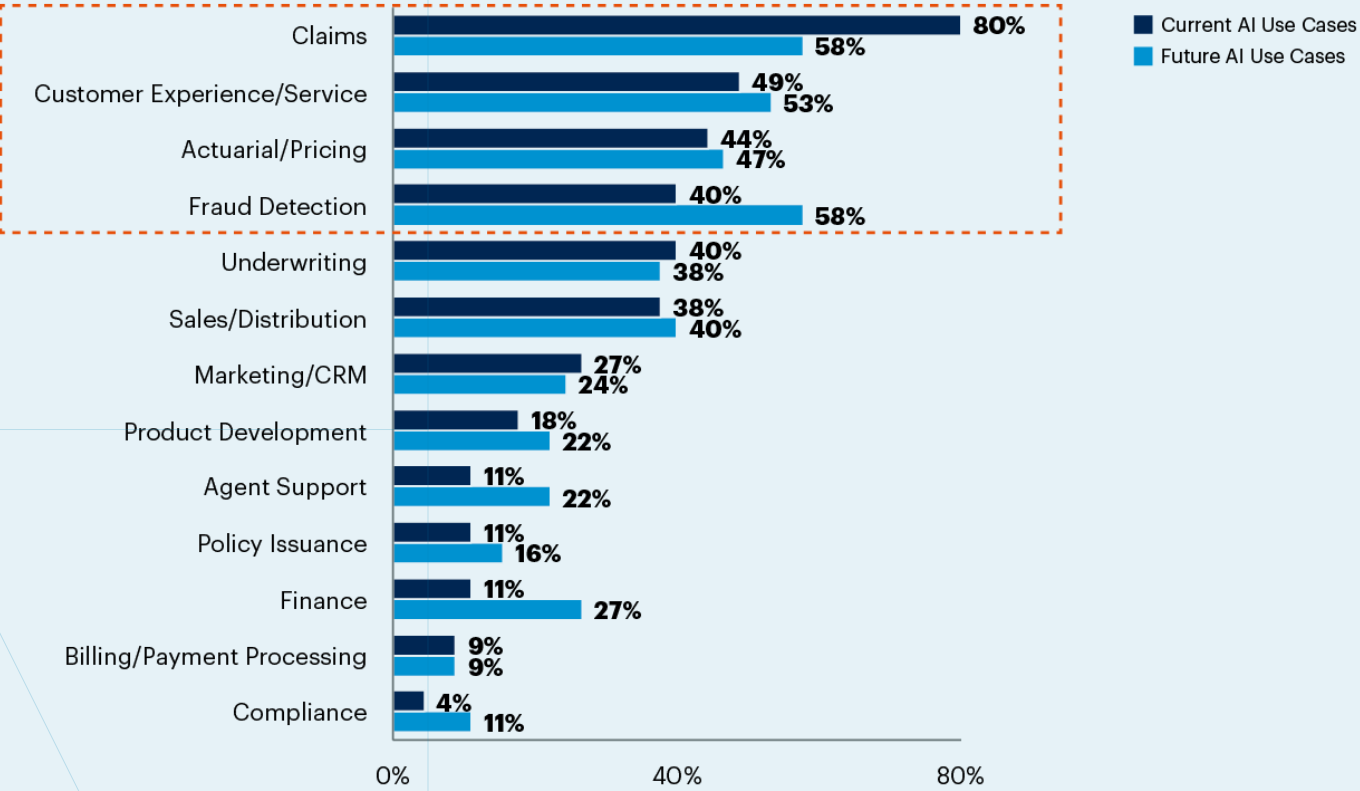
Product Development: Insights derived from data analysis and AI can inform the development of innovative insurance products tailored to specific customer needs, fostering a competitive edge in the market.

Risk Assessment: Utilizing advanced data analytics and AI algorithms, insurers can assess risks more accurately, enabling them to provide better-tailored and cost-effective insurance policies for their clients.

Operational Efficiency: AI applications can automate various internal processes, such as document processing, administrative tasks, and workflow management, leading to increased operational efficiency and cost savings.

Getting the business involved early in developing AI use cases that solve business problems to improve business and IT alignment and help scale AI is critical. Insurance technology and data leaders often show an inability to get business buy-in for AI, which means lower adoption and weaker business cases for AI investments. The market holds immense promise for future investments in AI, reflecting a growing potential and opportunities in areas such as fraud detection.

Top Current and Future Use Cases for AI
Percentage of Respondents (Rank Top 5)



n = 45 insurance; respondents who selected “deployed/in use today” or “plan to deploy in less than 12 months” in AI adoption

Q: Which are the top areas within your organization where artificial intelligence is being applied the most today/would be needed the most in 2027? Select up to 5 areas.

Source: 2022 Gartner Data & Analytics Digital Transformation Survey
786765_C



Source: Gartner, Inc., Insurance AI Expansion Will Require Use of Greater AI Techniques and Maturity. Kimberly Harris-Ferrante, Whit Andrews, 16 June 2023. <https://www.gartner.com/document/4454199?ref=solrAll&refval=382939355&>

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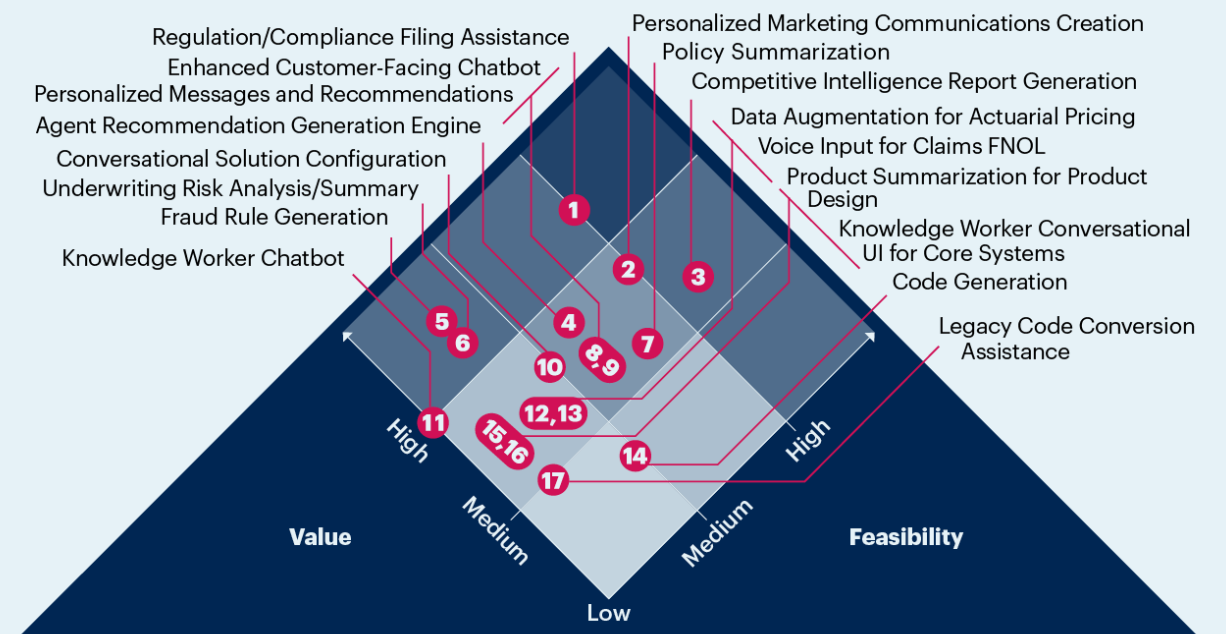
Where Are Opportunities Provided By Data In Terms Of Value Chain From The Innovation In Technology

Use Cases

This Prism highlights 17 prominent use cases for generative AI in both P&C and life insurance, emphasizing their value and feasibility. Insurance

CIOs can utilize this framework to initiate strategic discussions guiding investment decisions in this transformative technology.

GenAI Use-Case Prism for P&C and Life Insurance



Source: Gartner
796697_C

Gartner.

Source: Gartner, Inc., Use-Case Prism: Generative AI for P&C and Life Insurance. De Kimberly Harris-Ferrante, 02 August 2023.
<https://www.gartner.com/document/4595699?ref=solrAll&refval=382939915&>

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BPA

Using AI For Text Analysis To Automate Claims Processing And Using Predictive Analysis To Determine Risk Profiles For Underwriting.

The processing of complex claims — such as multiparty auto claims, catastrophe claims (hurricane, tornado, wildfire), and specialty claims (including heavy engineering breakdown or explosion) — is labor intensive and requires coordination and dispatch of experts across multiple parties. Coordinating image and video capture can involve teams working across multiple insurers, brokers, loss adjusters, and engineering specialists to settle claims faster and more efficiently. Improving the experience for customers and employee adjusters, as well as bringing customers more into the loop for claims through self-service, will help transform the claims process¹¹.

Challenges in Automating Claims

- Early engagement with senior claims managers is crucial to recognize chances for enhancing existing workflows.
- Automation is appropriate for simple claims and for streamlining repetitive tasks in complex claims, like extracting data from loss reports.
- Attempting to automate complex claims might lead to failure and the need for additional work, potentially diminishing the satisfaction of claims managers and adjusters.
- The automated rejection of claims necessitates a meticulous consideration of the current data protection regulations, particularly the EU General Data Protection Regulation (GDPR).

How AI can Help to Determine the Risk Profile for Underwriting

Insurers will need to use a combination of tools in a mixologist approach to maximize return on investment. A single tool alone is unlikely to unlock improvements in claims processing and loss costs. To fill this need, seek partners of existing claims vendors who have reintegration, emerging players in the Insurtech market, and existing services providers from the specialized claims market.

Increasing connectivity between different systems for capturing, analyzing, documenting, and storing claims data is critical when using multiple tools. Storage, recall, and sharing of visual information each require additional consent from the policyholder and additional access rights and controls to ensure ongoing compliance with privacy and data protection regulations, particularly when processing complex underwriting in personal lines.

Chatbots or Virtual Agents—Using Conversational AI (NLP)

A chatbot is a domain-specific conversational interface that uses an app, messaging platform, social network, or chat solution for its conversations. Basic chatbots use simple, decision-tree-based implementations that are always narrow in scope. A chatbot can be text-based, voice-based, or a combination of both¹². Chatbots in insurance have been predominantly deployed in property and casualty (P&C) insurance, with more limited use across individual and group life insurance. It is worth noting that there are also rule-based chatbots available on the market that scan for keywords, which should not be confused with AI-based chatbots. These first-gen solutions will also be superseded by Large Language Models (LLMs).

Challenges in AI Conversation

- Chatbots are typically used in conjunction with Machine Learning (ML) and Virtual Assistants (VAs) rather than being deployed independently by insurers.
- Their primary application is in sales & distribution and customer service functions, including touchless claims processing.
- Insurers often implement chatbots across various functional areas to enhance the overall customer service experience.
- These front-office use cases can also extend to the agency channel and are adaptable to multiple platforms, such as voice, web, mobile, and Facebook Messenger.

How AI Helps as a Virtual Agent

Effective use of a chatbot enables increased revenue through expanded support of online sales of complex products and lower costs by driving sales and customer interactions to a less expensive self-service channel. Chatbots help insurers respond to increasing expectations from their customers when engaging with their provider — which translates to higher financial empowerment and revenue-positive actions for policyholders.

Specific use cases in the insurance industry include support for administrative tasks. These can include how to obtain a copy of a policy or find content on a webpage, point of quote and bind, automated billing chat capability, handling property first notice of loss (FNOL) claims and claims intake, and requesting photos and video, reducing the time to inspect. Life insurers are also using chatbots to support personal health and wellness enrollment and coaching, as insurers are now progressing from sales-oriented use cases through to additional self-service use cases for policyholders. A strong understanding of insurance terminology is essential to meet engagement needs.

Customer Churn Prediction And Tailored Product Marketing Using Sentiment Analysis And Personalized Product Recommendation

Sentiment analysis involves the process of discerning whether a particular post conveys a positive, negative, or neutral perspective on a given topic by scrutinizing the textual content. AI tools employed during the ingestion of objects extract metadata attributes from images, documents, and videos to describe the content or other pertinent characteristics. Probability analysis is then employed to assign these attributes to specific object types, subsequently initiating relevant workflows and commencing the necessary business processing.

Challenges in Customer Churn Prediction

Predictive models, where future behavior is modeled by examining past events or patterns, can also be customized or trained. Using as few as 1,000 rows of historical data, predictive models may be produced. For example, to model customer turnover or “churn,” CIOs need to:

- Select data columns that will be used to train the model (such as customer turnover).
- Use related data tables describing the customer.
- Remove irrelevant data without model dimensions present.

How AI Can Help in Building Predictive Models Through Sentiment Analysis

Brand 24¹³, an AI-driven sentimental analysis tool, unlocks the power of an integrated internet monitoring tool paired with advanced sentiment analysis. Application of this tool can produce models with binary outcomes, multiple outcomes, or numerical predictions, with applications in the supply chain, retention, and support. Datasets with quantitative

predictive dimensions used to train the model will provide the highest degree of accuracy. Through data sentimental analysis, insurance companies can monitor negative comments, mitigate potential PR crises, gain valuable insights from customers, and predict customer churn.

Fraud Detection

Using Generative AI To Build Models Based On Past Fraudulent Events To Detect Suspicious Activities

A far greater percentage of respondents projected that fraud detection was set to be of increased importance in 2027 (58%) compared with 40% today. Insurers have historically focused on claims fraud detection, but increasingly, they need to focus on preventing additional patterns of application and billing fraud as they increase the volume of online sales and automated processing. Greater maturity around the need for advanced fraud solutions that go beyond claims to support larger business outcomes, such as loss prevention and underwriting profitability, will drive holistic fraud management suites.

The Challenge of Fraud Detection

Traditional fraud detection systems rely on rule-based approaches, historical data, and predefined thresholds to identify fraudulent activities. While these methods are valuable, they have limitations:

- **Static Rules:** Rule-based systems can't adapt to evolving fraud patterns and may produce false positives or negatives.
- **Data Imbalance:** In fraud detection, genuine transactions far outnumber fraudulent ones, leading to imbalanced datasets that can hinder model performance.
- **Complex Fraud Schemes:** Fraudsters continually develop sophisticated methods, making it challenging for static systems to keep up.

How AI Enhances Fraud Detection

Shift Technology¹⁴ is an Insurtech company that specializes in developing AI software for insurance fraud detection. The company's software uses machine learning algorithms to analyze data from various sources, including social media, public records, and insurance claims,

to identify patterns of fraudulent activity. The software can also detect anomalies in claims data and flag them for further investigation. Shift Technology solutions are designed to help insurance companies reduce losses due to fraud and improve their overall profitability.

- **Anomaly Detection:** AI models can create synthetic data that mimics legitimate transactions. By training on both genuine and synthetic data, models become adept at detecting unusual patterns indicative of fraud.
- **Adaptability:** Unlike rule-based systems, AI models can adapt to new fraud patterns. As fraudsters evolve, the model evolves with them, improving detection rates.
- **Data Augmentation:** AI can augment imbalanced datasets by creating synthetic examples of rare events (fraudulent transactions), making the model more robust.
- **Unsupervised Learning:** AI models, like Variational Autoencoders (VAEs) or Generative Adversarial Networks (GANs), learn patterns unsupervised, reducing the need to label fraudulent cases manually.
- **Behavioral Analysis:** AI can analyze transaction behaviors, such as user interactions or purchasing habits, to identify deviations from the norm.

AI is reshaping the future of fraud detection by offering adaptability, data augmentation, and behavioral analysis. By harnessing the power of AI, organizations can stay one step ahead of fraudsters in an ever-evolving digital landscape, protecting their customers and assets more effectively than ever before. The battle against fraud is taking a leap forward, thanks to the generative capabilities of AI.

Customer Churn Prediction

And Targeted Marketing Tailored Products Based On Data

Personalized marketing is a marketing strategy that tailors messages and product offerings to individual customers based on their interests, preferences, and behaviors. In other words, it's all about delivering targeted and relevant content to the right person at the right time.

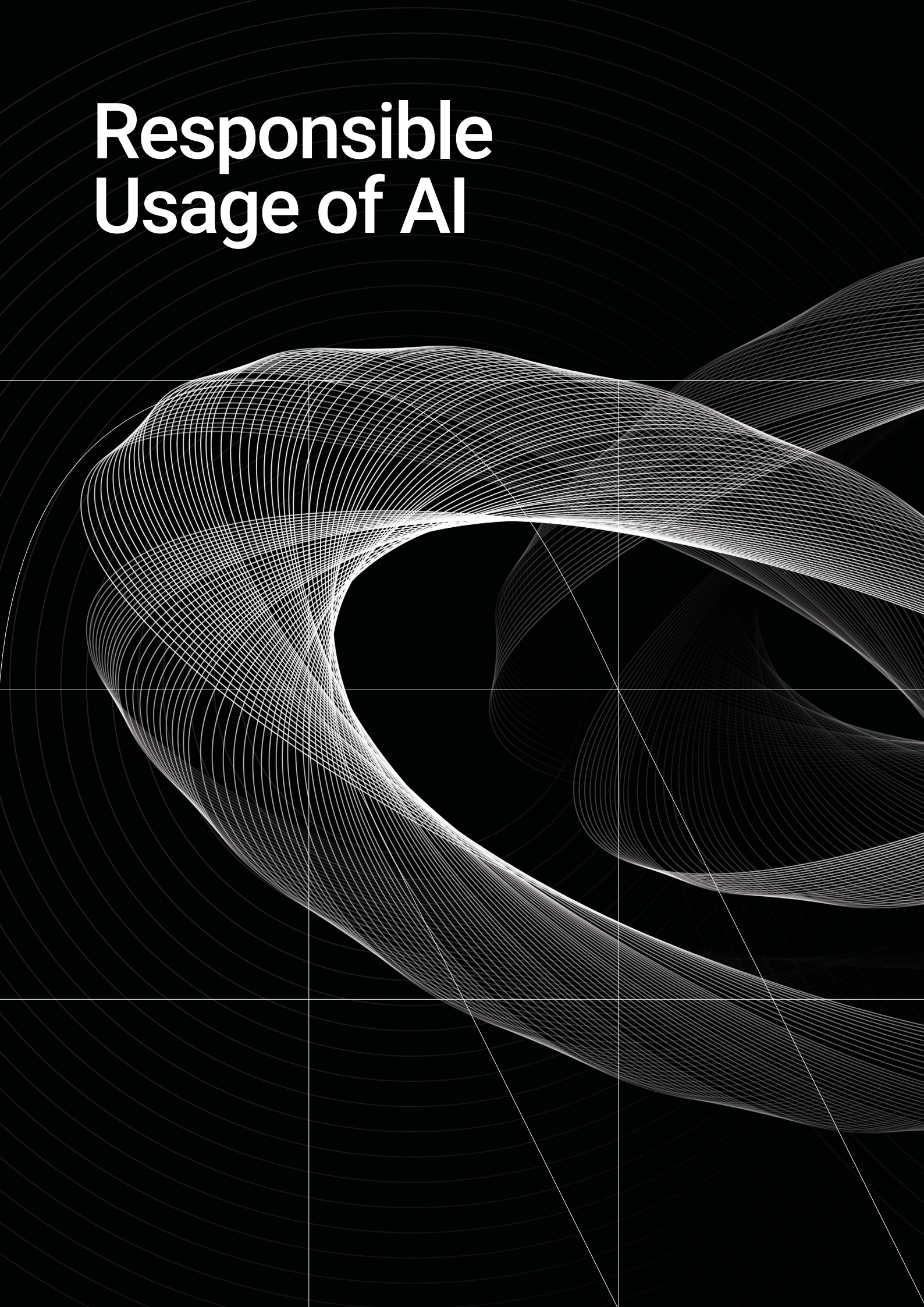
Challenges in Personalized Product Prediction

- Establishing a strong brand identity is crucial.
- Creating valuable and engaging content is necessary for customer attraction.
- Active engagement with customers through social media and email marketing is important.
- Building a loyal customer base through positive word-of-mouth referrals is a continuous effort.

How Data Improves Tailored Products

Personalized marketing is a powerful tool for businesses to connect with customers and deliver a better overall experience. By using customer data such as browsing and purchase history, demographic information, and social media activity, businesses can deliver content and offers that are truly relevant and useful to the customer. However, there are potential risks and downsides to personalized marketing, such as privacy concerns and the potential for data breaches. To balance personalization with privacy concerns, businesses must take a thoughtful and strategic approach to the use of customer data, being transparent and ethical and focusing on data that is truly relevant to the customer's experience.

Responsible Usage of AI



Through the implementation of AI in customer service, claims management, and sales and distribution, insurers anticipate streamlined processes, enhanced customer retention, increased engagement, and automated claims outcomes. Responsible usage of AI makes artificial intelligence a positive force rather than a threat to society. Responsible usage of AI is an umbrella term for many aspects of making the right business and ethical choices when adopting AI that organizations often address independently.

Regulatory Compliance

AI Trust, Risk, and Security Management (AI TRiSM)

AI TRiSM encompasses a set of measures designed to ensure the governance, reliability, fairness, trustworthiness, robustness, efficacy, and data protection of AI models. This framework includes a range of solutions and techniques, such as model interpretability, anomaly detection for data and content, AI data protection, model operations, and resistance to adversarial attacks¹⁵.

Numerous governments incorporate regulatory and compliance functions either as independent organizations or as specific departments or divisions within agencies. These regulatory and compliance functions include a diverse array of responsibilities, ranging from financial regulations to workplace safety regulations. Each of these functions entails a wide-ranging set of responsibilities, typically involving tasks such as application processing, compliance assessment, licensing, handling of complaints or public reports, inspection activities, and investigative procedures.

Indicators Vs. Facts

Artificial Intelligence is designed to assist with decision-making when the data, parameters, and variables involved are beyond human comprehension. For the most part, AI systems make the right decisions given the constraints. However, AI notoriously fails in capturing or responding to intangible human factors that go into real-life decision-making — the ethical, moral, and other human considerations that guide the course of business, life, and society at large¹⁶.

Actual Data Vs. Generated Data

Generated data is data that has been artificially created by computer algorithms, as opposed to real data that has been collected from natural events. Generated data draws enterprises’ attention by helping to augment scarce data, mitigate bias, or preserve data privacy.

For example, generated data can be used in radioactive data sets. The term “radioactive” is often used to describe data that is constantly changing and difficult to keep track of. This can be due to a variety of factors, such as the rapid growth of the dataset, the frequent addition of new data points, or the dynamic nature of the data itself. It isn’t easy to keep track of such data when using actual data methods, and generated data can often provide more stable and usable data sets.

On the other hand, it is better to use real data rather than synthetic data in cases where the goal is to reproduce the exact distribution of a real-world dataset. In such cases, it is often preferable to use the original dataset rather than a synthetic version.

Limitations of Data And AI Models

According to the research done by Gartner, indicators show that the primary challenge lies with the skills of staff. Both business and IT leaders recognize the transformative impact of AI on job requirements, with 56% of respondents affirming the need to acquire new skills to navigate both existing and forthcoming roles effectively. The second prominent challenge pertains to the apprehension stemming from the unknown. Forty-two percent of respondents express a lack of complete comprehension regarding the benefits and practical applications of AI in the workplace. The third crucial challenge revolves around the data scope and quality inherent to AI. Effective AI initiatives rely heavily on substantial volumes of high-quality data, enabling organizations to derive informed insights and optimal solutions for a diverse array of scenarios.

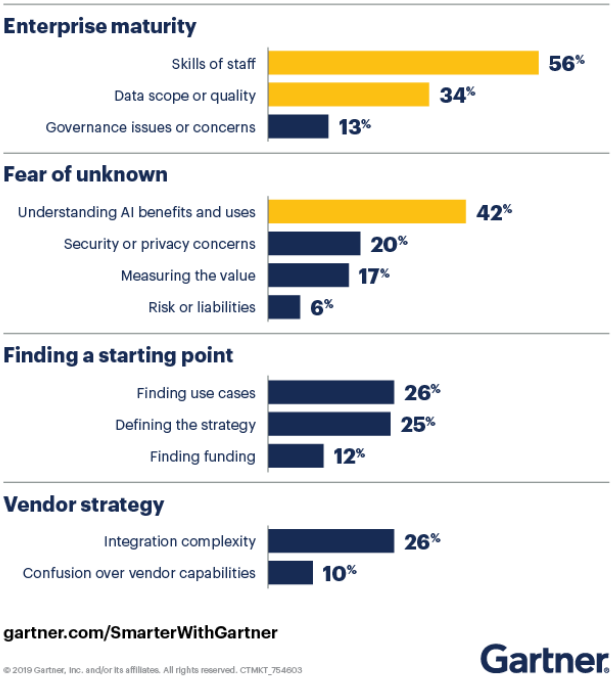
The adoption of AI has brought forth a multitude of new ethical and societal considerations. Consequently, government regulations might impose limitations on AI research, with various governmental bodies currently seeking feedback on AI safety measures. However, certain limitations hinder the use of generative AI for critical applications, including the potential for AI hallucinations, factual inaccuracies, bias, a black-box operational nature, and a lack of comprehensive experience with the complete AI life cycle.

Verifying the sources of information produced by general-purpose language learning models (LLMs) is expected to pose significant challenges. Additionally, there exists a general lack of awareness of generative AI among security professionals, leading to incidents that could potentially undermine the wider adoption of generative AI.

It is important to note that while generative AI holds significant potential for various applications, its use also poses risks, as it can be employed for malicious purposes. The full and accurate detection of generated content, including deepfakes, is expected to remain challenging. The computing resource required to train large, general-purpose foundation models is heavy and not affordable to most enterprises. Sustainability concerns about high energy consumption for training generative models are also rising.

Top 3 challenges to AI/ML adoption

Sum of 1 to 3 rank



Source: Gartner, Inc., 3 Barriers to AI Adoption. Laurence Goasduff, 18 September 2019. <https://www.gartner.com/smarterwithgartner/3-barriers-to-ai-adoption>

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Tools Available

Dolffia (Syntphony Intelligent Document Processing)

Dolffia¹⁷ is a document processing platform that automatically classifies a wide range of document types and extracts the salient information they contain. It leverages the powerful cognitive capabilities of modern AI and considerably reduces the time and effort needed to process documents manually and allowing businesses to extract more value and insight from their content. Through partnerships with Amazon, Microsoft, Google, Salesforce, Oracle, Adobe, Redhat, and SAP, Dolffia integrates the world's leading tech giants to build a powerful ecosystem.

Insurance Industry Challenges

Insurance companies need to handle the demands of data-intensive tasks and high coding requirements. Efficient data management is key, particularly when utilizing data for text analysis and automating the claims process.

Solution Overview by Dolffia

This comprehensive approach provided by Dolffia ensures the seamless integration of complex datasets and advanced algorithms, enabling streamlined and accurate analyses of unstructured data to improve decision-making and client data management.

Value added to Business

- **Ensures compliance:** Dolffia largely eliminates the risk of documents getting mislaid or processed incorrectly because they are accepted without a signature, for example. This is particularly important in regulated industries.
- **Quick time to value:** As a cloud-native application, Dolffia offers rapid set-up time and reduces

indirect IT overheads to almost zero when installed in the public cloud. It can also be run on on-premises infrastructure.

- **Transparent Pricing:** The pricing model for Dolffia adapts to a client's needs with a variable cost element determined by the number of pages, document complexity, required response time, etc.
- **Fast and Scalable:** Dolffia can extract all key information from documents rapidly and at scale. Dozens of documents can be processed in the time it would take a human to read just one.
- **Highly Adaptable:** Unlike document processing systems that require templates or spatial clues, Dolffia can extract information from a wide range of structured documents with more than 40 use cases identified so far.
- **Attractive ROI:** As Dolffia significantly reduces the number of FTE employees needed for low-value information classification and extraction tasks, so optimizing payroll costs

eva (Syntphony Conversational AI)

eva¹⁸ is NTT DATA's enterprise-level platform designed to create and manage virtual agents with Generative AI that understands and provides highly personalized responses to users. Its innovative architecture enables precise responses across different channels, in multiple languages, and in an omnichannel manner. It also acts as an orchestrator, facilitating integration with various services. The platform is trusted by Unilever, Santander, Zurich, Interbank, and Livelio. It supports clients across insurance, finance, and other industries alike.

Insurance Industry Challenge

In the insurance industry, effective communication with clients is crucial to collecting essential information and managing data efficiently. Furthermore, the ability to make transactional queries in an agile and efficient manner is paramount. This often involves the compilation of information from multiple channels to establish a comprehensive data ecosystem that supports seamless operations and streamlined customer experiences.

Solution Overview by eva

Conversational AI is gaining importance in the insurance sector, which has many points of contact with its customers. With the expansion of information and communication technology, users have greater access to different digital media, remote attention is becoming more indispensable every day, and the user experience is much more demanding. Customers have many demands, and insurers are forced to offer different channels to provide the right information with the best language.

On the contrary, all insurance ecosystems are measu-

red by their productivity. eva has been developed not just for creating value for insurance customers but also for brokers and employees.

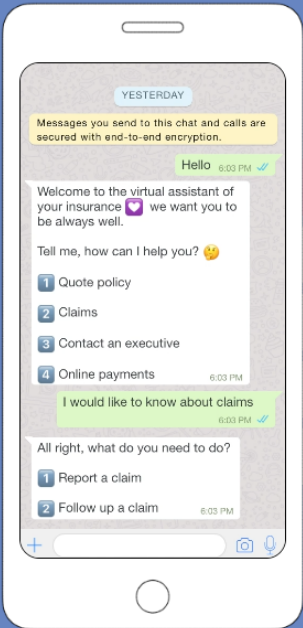
Value added to Business

- **Improved customer experience:** eva is designed to meet the demanding needs of businesses, enhancing the customer experience by providing 24/7 support across a wide range of channels. Whether through the call center, mobile app, website, WhatsApp, smart assistants, or social media, etc.
- **Unprecedented Scalability:** It offers seamless integration across multiple communication channels.
- **Solution versatility:** eva embodies scalability, effortlessly handling thousands of users and millions of contacts each month for leading companies. It adapts and grows in tandem with your business, ensuring it can meet the demands of a constantly evolving digital landscape.
- **Continuous Improvement Through Cognitive Learning:** eva employs Generative AI so it can analyze interactions to enhance the user experience, ensuring the platform remains at the forefront of delivering precise and effective responses.
- **Personalized Brand Engagement** One of its stand-out features is the ability to create an interactive channel that seamlessly aligns with your brand's culture and voice.
- **Reduced Operational Costs.** Companies can reduce customer service operational costs, making it an economically prudent choice for businesses seeking.

Use Cases

With eva, users are able to make transactional queries in an agile and efficient manner.

With its great integration capabilities, the company's information can be used for the service of customers. In addition, multiple digital channels are available.



- Claims management
- Payment / reimbursement
- Insurance quotation
- Advisor for customers services
- Report a claim

Source: eva Platform Webpage, 2023.

Conclusion

Despite AI technology, Human Interaction Is Mandatory For AI Transformation in Insurance.

In the insurance sector, the necessity for digitizing current personalized advice and ensuring that future digital solutions is widely acknowledged. Trust holds paramount importance in the insurance industry, particularly among customers. The gradual pace of digital transformation in the insurance sector can be attributed to the industry's reliance on trust. Clients specifically depend on personalized information from their financial advisors. Although artificial intelligence is an impressive advancement, it cannot fully replace human capabilities. The necessity for human oversight will continue to grow alongside the increasing sophistication of AI.

As AI approaches the capability to autonomously make subjective decisions without human intervention, the emergence of advanced language models, reflects a significant stride toward matching human cognitive capacities. Despite these advancements, AI's current capabilities primarily revolve around data-driven decision-making in virtual environments, lacking the comprehensive understanding and nuanced judgment required in real-world contexts. While proficient in processing historical data and generating probabilistic outcomes, AI often operates devoid of the empathetic consideration crucial for nuanced decision-making.

As a result, Machines lack the capability to empathize. Human intervention is indispensable in training AI models and machine learning algorithms to incorporate the compassionate aspect of human nature. While artificial intelligence is a powerful tool, its utility to humanity diminishes if it fails to guide decisions that embody kindness and consideration.

A 3D visualization of a crystal lattice structure, showing a grid of spheres (atoms) connected by lines, with a faint grid overlay.

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NTT DATA

Mark Toye
Head of Data, NTT DATA Insurance EMEAL

Gopal Singh
Software Development Senior Specialist Advisor | Financial Services & Insurance, NTT DATA Services

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