Generative AI in the Insurance Industry

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Agenda

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- What is Generative AI?
- Demystifying Generative AI
- Why is Generative AI Important for Insurance?
- Relevance for the Insurance Industry
- Examples
- Conclusions
- Q&A

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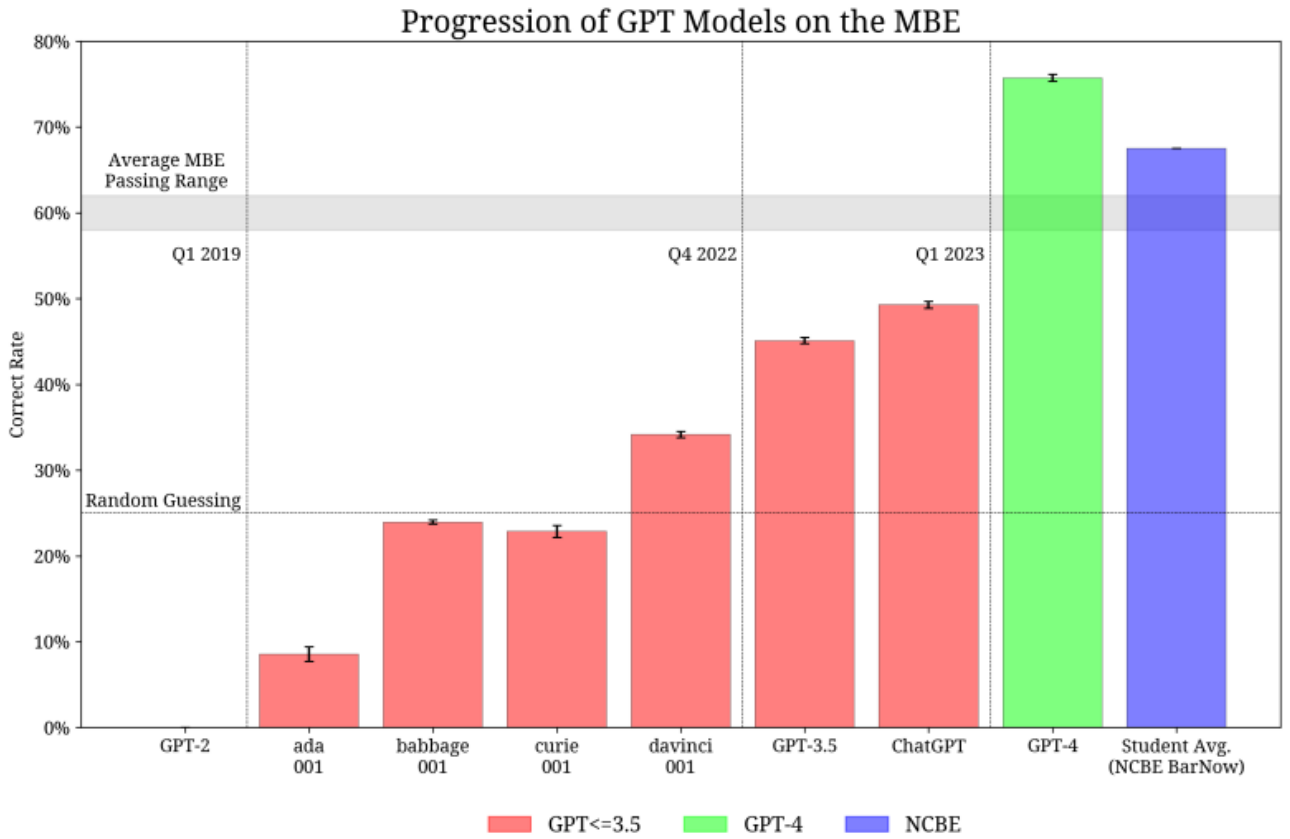
Introduction

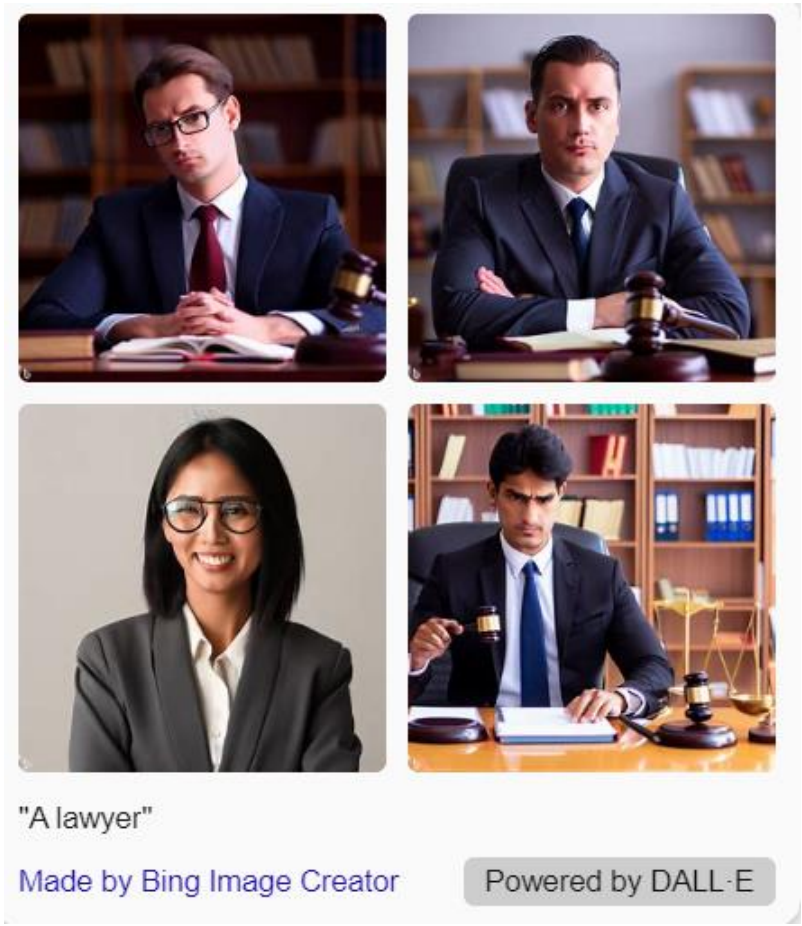
With ChatGPT we can all pass a law exam…….



Source: GPT-4 Passes the Bar Exam, Daniel Martin Katz, Michael James Bommarito, Shang Gao,Pablo Arredondo,15 March 2023

Risks of Gen AI

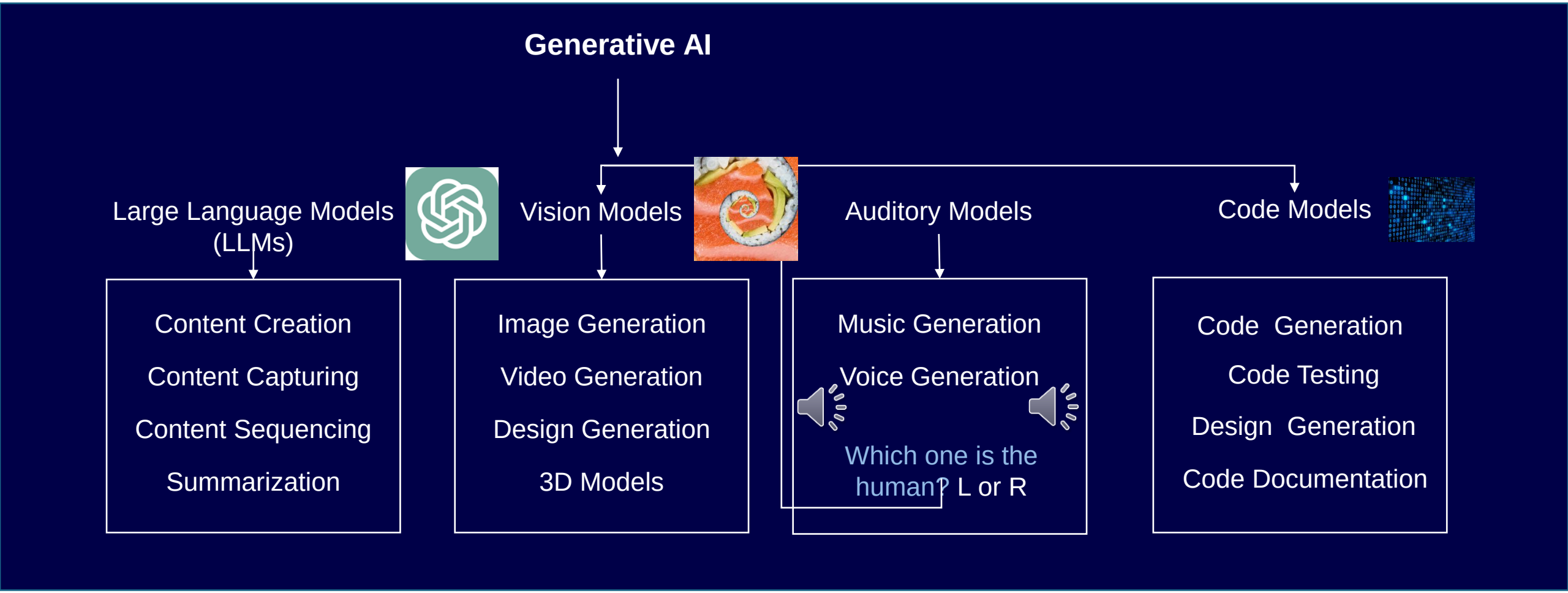
Anything odd that you notice?



What is Generative AI

What is Generative AI?

Generative AI is a machine learning model that generates novel content from a variety of inputs like text, images, sound, etc.



What is Generative AI useful for?

Based on 6 core capabilities, Generative AI will fundamentally change common business tasks we perform on a day-to-day basis.

Content Generation

Text, Image, Audio and Music, Video

Code Generation

Code Generation (Codex, Code Whisperer

Summarization

Summary of customer support conversation logs or meeting transcripts

Contract analysis summary

Semantic search

Knowledge extraction and knowledge management

Information discovery and knowledge mining

Entity Extraction

Extraction of specific categories of information from documents, emails, orders

Translation

Translate languages

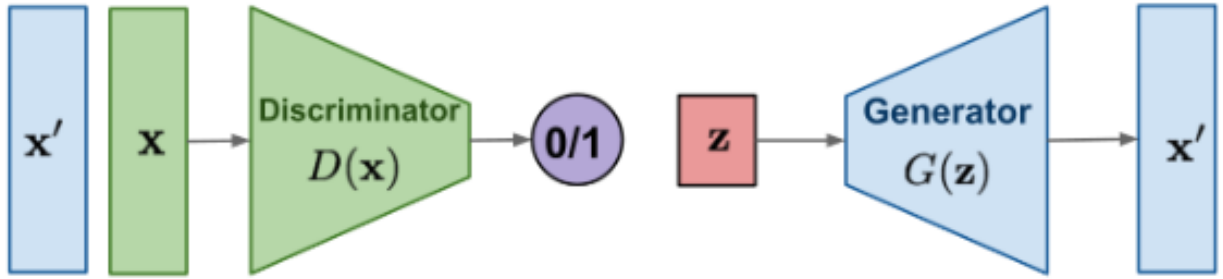
Further use cases: synthesize information, extrapolate trends, annotate data, edit content, answer queries, tutor subjects, analyse data, moderate content, recommend items, identify sentiment, predict text, correct mistakes, generate narratives, detect patterns, simulate conversations, understand context

Demystifying Generative AI

(What’s under the hood?)

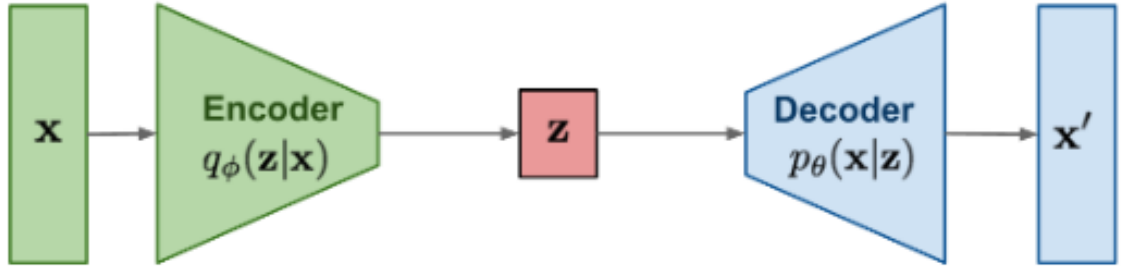
Types of Generative AI methods and uses - it's just applied math

GAN: Adversarial training



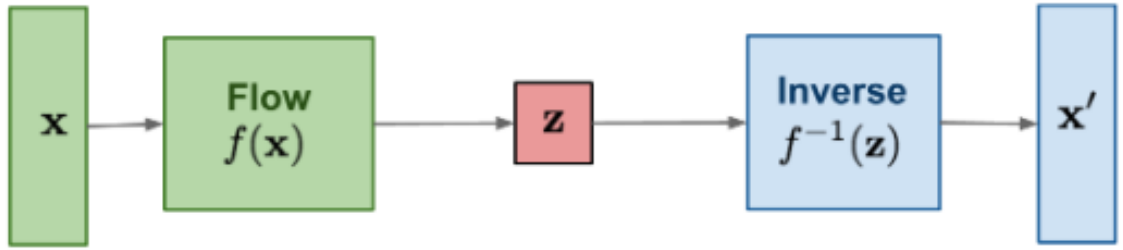
Applications of GANs
Image **Synthesis**
Video Generation
Data Augmentation
Style Transfer
Anomaly Detection
Text-to-Image Synthesis

VAE: maximize variational lower bound



Applications of Variational AutoEncoders
Image and Video Generation
Anomaly Detection
Music Generation
Data Imputation
Dimensionality Reduction
Signal Processing
Security Analytics

Flow-based models: Invertible transform of distributions



Applications of Transformer-Based Model
Language Translation
Sentiment Analysis
Chatbot and Virtual Assistant
Questioning Answering
Content Creation
Detect Trends and Anomalies

Diffusion models: Gradually add Gaussian noise and then reverse

Application of Diffusion Model
Decision-Making
Reaction Time Analysis
Perceptual Decision Making
Financial Markets
Medical Diagnosis

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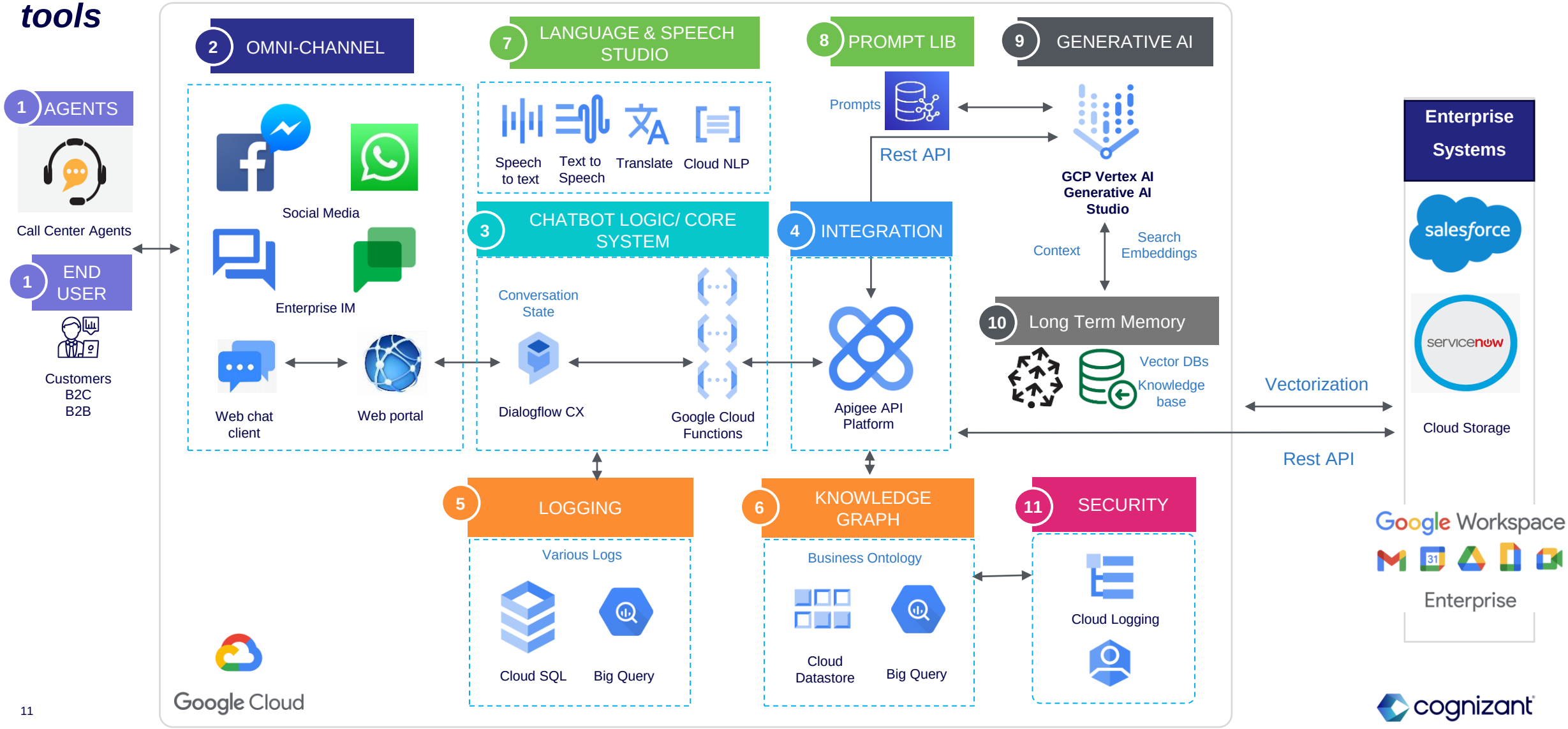
Generative AI - *Example Reference Architecture (Google) of an intelligent chatbot*

It still requires "traditional" data management, enterprise systems and ML environment tools



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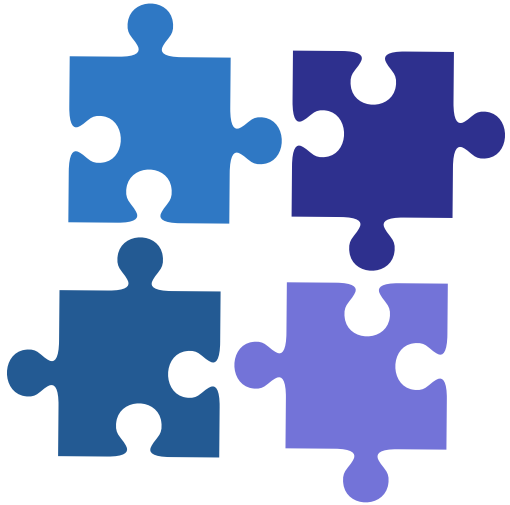
Why is Generative AI important for Insurance?

Insurers across the globe are assessing how quickly they can build generative models and incorporate it into their day-to-day work

Testing the underlying technology

Building Proof of Concepts and Prototypes



Developing potential use cases

Partnering with service providers and tech providers

CHUBB	Coalition	Allstate	Allianz	Topdanmark Forsikring • Pension
Partnered with Snorkel AI that accommodates noisy labels, labeling disagreements between subject-matter experts and a large number of classification	Started a new initiative to deploy generative AI and large language models to help brokers and businesses protect themselves from cyber risk	Allstate has deployed conversational AI-powered digital agent	Allie is a powerful AI-powered virtual assistant that works seamlessly across company's website , portal and Facebook	Topdanmark launched Globus, an advanced virtual insurance agent built on boost.ai's conversational AI technology

** Examples taken from publicly available sources*

Building a proposal has become considerable easier with the emergence of Gen AI

Issues & Challenges

- Difficult to classify, personalize, and filter requests even with machine learning
- Time consuming tasks to summarize product catalogues
- Too much data to properly curate within a given SLA

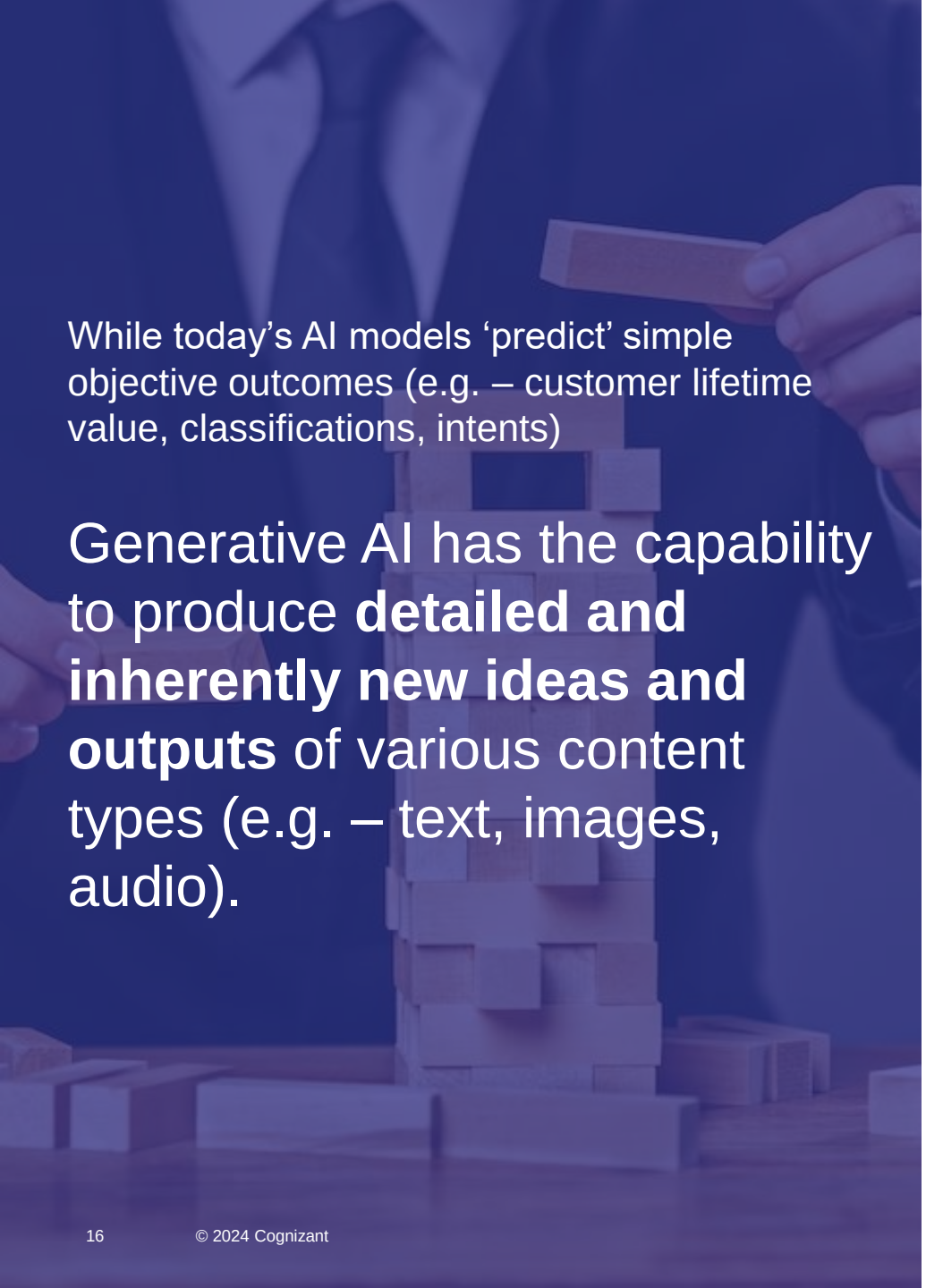
Value Add

- Generative AI can be used to automatically extract and generate personalized proposals with relevant data for a variety of requests, saving time and money for the B2B sales teams.

Potential Outcomes

- Generate relevant and standard content across geographies
- Improve proposal turn-around-time
- The sales team can focus on more important tasks of the sales life-cycles than just responding to requests
- The number of leads that get qualified, increases

Relevance for the Insurance Industry



While today's AI models 'predict' simple objective outcomes (e.g. – customer lifetime value, classifications, intents)

Generative AI has the capability to produce **detailed and inherently new ideas and outputs** of various content types (e.g. – text, images, audio).

Generative AI needs human involvement for successful adoption & compliance

Co-Creator

Low volume output

Generative AI contributes with inputs and ideas to create high value artifacts which are then refined and iterated by the user to produce the final output.

Reviewer

High volume output

Generative AI creates content at scale. The context is reviewed / approved by users to eliminate hallucinations. Responsible AI and Data Privacy Governance is needed.

Key KPIs for Generative Models

Quality

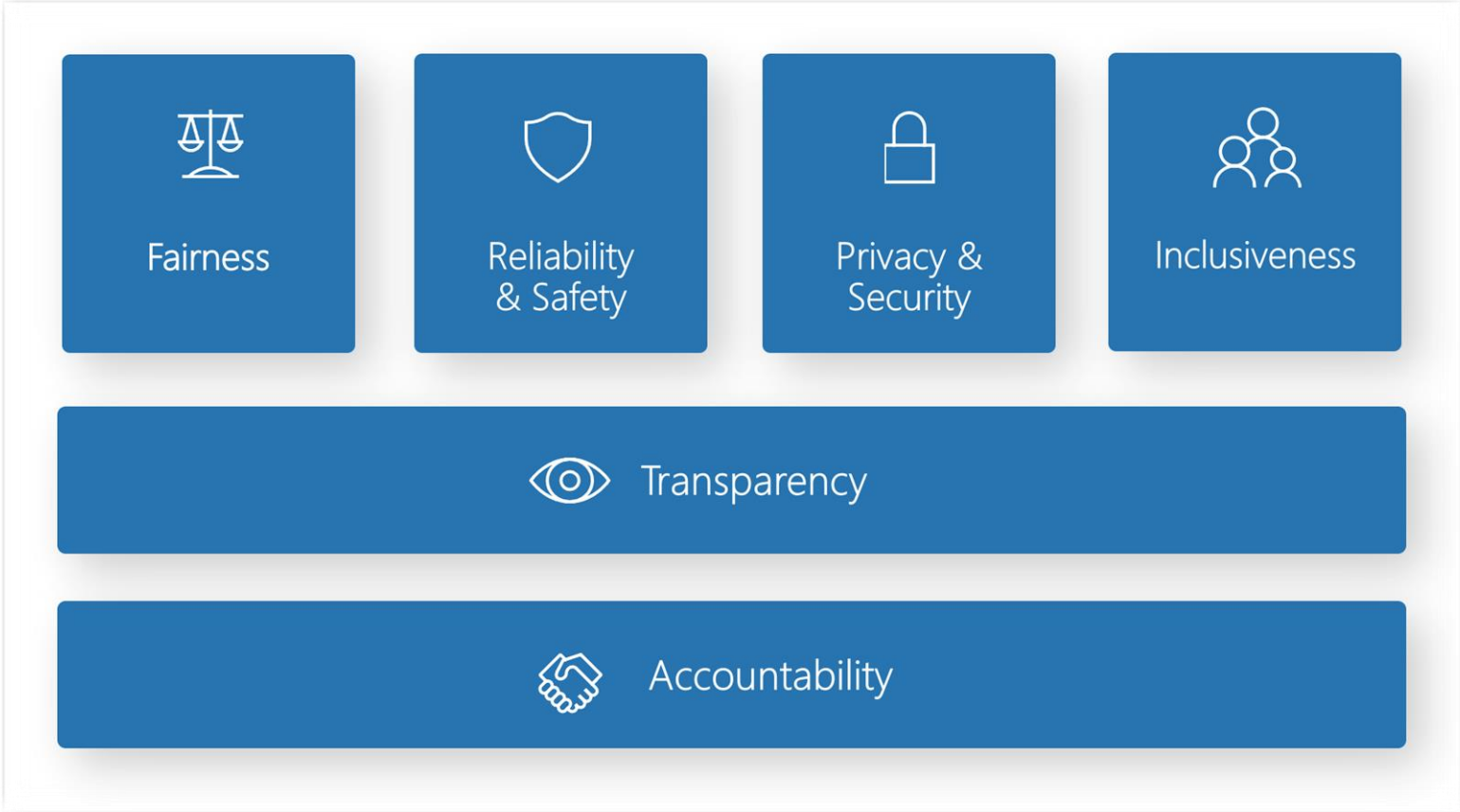
Diversity

Speed

Cost

Responsible AI

In essence, Responsible AI is about ensuring that as we harness the power of artificial intelligence, we do so in ways that are ethical, safe, and beneficial for everyone



EU/UK Digital Services and Data Initiatives

EU DIGITAL SERVICES PACKAGE

EU Digital Services Act

- Online intermediaries are, in principle, not liable for content hosted or transmitted
- But they have to act expeditiously to remove any flagged illegal content

EU Digital Markets Act

- Imposes obligations (including data and interoperability rules) on 'gatekeeper' platforms
- Gatekeepers are providers of core platform services that meet certain financial and user thresholds

UNITED KINGDOM

UK Online Safety Bill

- Applies to providers of internet services
- Establishes the duties to mitigate harm, carry out risk assessments and to act swiftly to take down illegal content

UK DMCCB

- Draft yet to be revealed but it is expected to introduce new competition rules for big digital platforms and broader reforms to the UK's competition and consumer laws

EU DATA STRATEGY AND ARTIFICIAL INTELLIGENCE STRATEGY

EU Data Governance Act

- Establishes a governing framework for data sharing and uses in the EU
- Regulates the re-use of public data, data intermediation services and data altruism activities

EU Data Act

- Applies to manufacturers of smart devices and cloud services providers
- IoT products have to allow users to easily and in real time access data collected or generated

EU Artificial Intelligence Act

- Covers providers, manufacturers, users, distributors and importers of AI systems
- Bans certain AI systems and requires a conformity assessment with respect to high-risk AI systems

Source: SIDLEY AUSTIN LLP

Update on DMA, DSA and UK's OSB

EU Digital Markets Act

EU Digital Services Act

UK's Online Safety Bill

Source AUSTIN LLP

Generative AI will be **alongside of us**, not replacing us just yet

For this Responsible AI (RAI) offers a solution to guard and guide in its deployment across organisations

Task Evolution, Not Elimination with RAI

As In the dynamic landscape of the insurance industry, the integration of generative AI holds the promise of transforming operations and enhancing customer experiences, while the principles of responsible AI ensure these advancements are pursued ethically, transparently, and equitably.

Guardrails, Guidelines and Standards for adoption

By adhering to responsible AI guidelines, we can harness the power of generative AI to innovate and improve services, from personalized policies to efficient claims processing, all while safeguarding data privacy, ensuring fairness, and maintaining accountability.

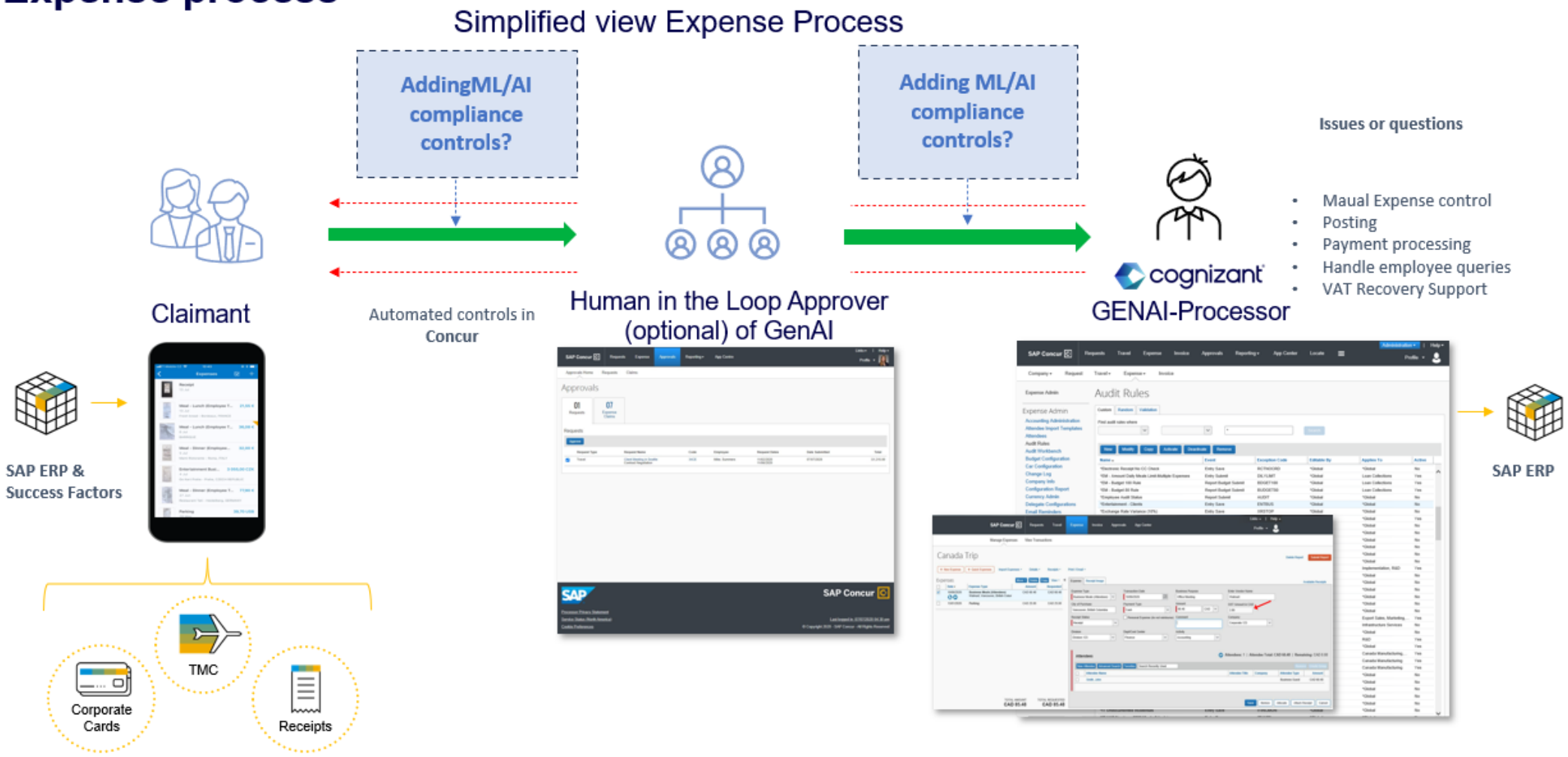
Human- AI Collaboration

The Human-in-the-loop approach not only optimizes operational efficiencies and risk management but also reinforces our commitment to upholding the highest standards of integrity and trustworthiness, fostering a positive impact on both the industry and the communities we serve.

Examples

Operations: how if you could get an assistant take care claims end-2-end?

What technology to apply will depend on what we are trying to solve for in the Expense process



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Digital experience client cases for banking, financial services, insurance & pension

Insurance Innovation as a Service

The challenge

The client is a tier 1 Property & Casualty insurer with more than $2.9 billion in written Personal Lines premiums, and over $9.5 billion in written Commercial Lines premiums in 2022. In late 2022, they identified innovation as a strategic imperative and sought to partner with a technology consulting provider to jointly explore and experiment with various technologies or capabilities that could enhance organizational performance and customer satisfaction.

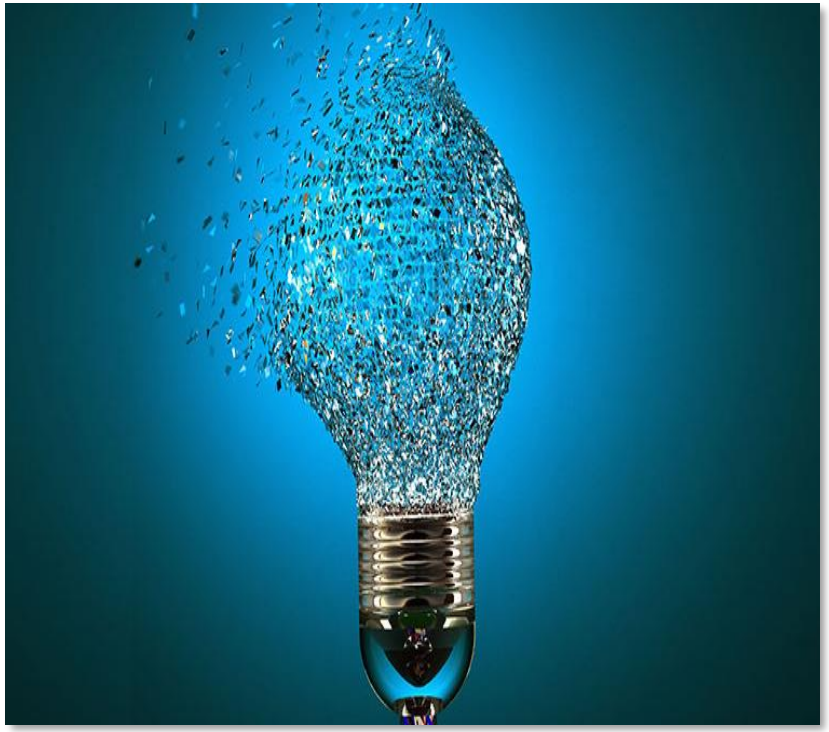
The approach

Cognizant iidentified use cases to experiment with emerging technologies (like Generative AI) that may provide differentiated capabilities for the client, while leveraging Cognizant's partner capabilities, skills, infrastructure and industry ecosystem to deliver successful Proof of Technology / Proof of Concept

The outcomes

The prototypes developed in these experiments have been presented to client's senior leaders, as well as their Board of Directors. Completed experiments include:

- A GPT powered chatbot that responds to queries from potential auto insurance buyers
- A GPT powered text-based conversational chatbot to accept claim files as inputs and generate questions regarding missing fields
- A Google Generative AI powered Virtual Assistant that provides legal insights
- A research assessment on quantum computing , including a high-level design of an experiment to demonstrate its practical applications



Project Duration	6 Weeks
Vertical	Insurance
Region	United States

Sue Rickard
Insurance CTO and Innovation Leader

Digital experience client cases for banking, financial services, insurance & pension

GPT-Driven Claims Virtual Assistant

The challenge

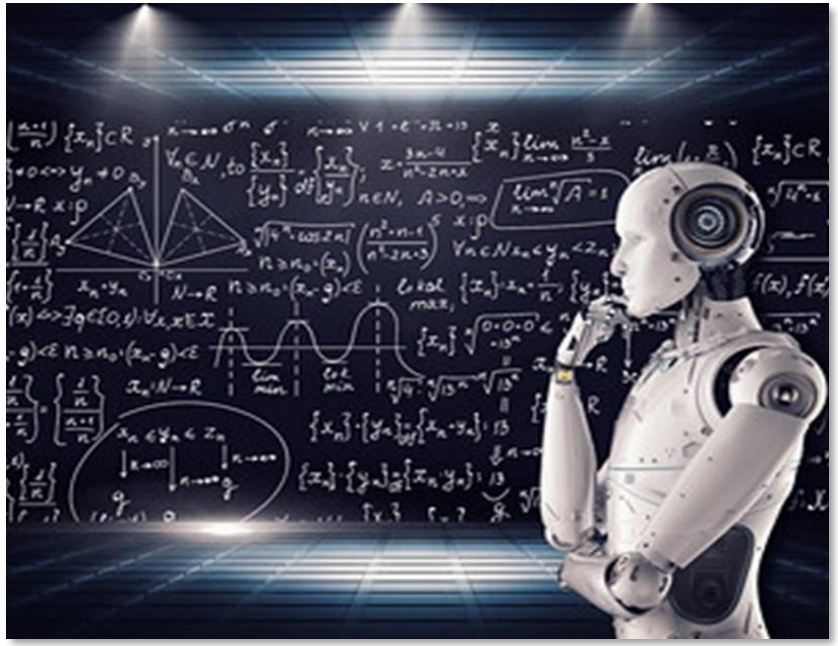
The client is a Tier 1 Property & Casualty insurer with more than $9.5 billion in written Commercial Lines premiums in 2022. Can a Conversational AI-based Virtual Assistant using Generative AI accelerate the automation of the Workers Comp compensability process by identifying opportunities to reduce manual investigations, reducing customer touchpoints, accelerating compensability decisions, and improving claim investigation accuracy?

The approach

Cognizant built a text-based conversational chatbot to accept claim files as inputs and generate questions regarding missing fields. As the user (claim handler) would input responses, the chatbot would update the claim file until all missing information was retrieved.

The outcomes

This experiment proved that a digital virtual assistant was able to identify 96% of missing claim information from fabricated test claim files. A Knowledge Graph was able to identify missing information and Generative AI was able to frame the right kind of questions. The Virtual Assistant was able to engage and continue conversations with a claim handler until all missing information was retrieved



Project Duration	6 Weeks
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Insurance CTO and Innovation Leader

Conclusions

Remember, Generative AI is a powerful tool, but like any tool, it needs to be used responsibly.

While mathematical methods like neural networks and LSTMs offer immense potential, we must address issues like data bias, explainability, and ethical considerations.

By leveraging the power of math responsibly, we can unlock the true potential of Generative AI to transform the insurance industry for the better.

Q&A

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Thank you