

AI, Large Language Models and ChatGPT

Researchers estimate that broader adoption of AI could lead to savings between 5-10% in healthcare spending or roughly \$200-\$360 billion a year. These estimates are based on AI use cases employing technology that are attainable within the next 5 years.

<https://www.healthcarediver.com/news/artificial-intelligence-healthcare-savings-harvard-mckinsey-report/641163/>

GUIDEWELL

Large Language Models (LLMs) and ChatGPT

ChatGPT Demo



What is ChatGPT?

- ChatGPT is a Large language Model or **generative AI** capable of intelligent conversational dialogues to create a unique, human-like experience unlike any other available AI.
- It is a **free to use** cutting-edge artificial intelligence (AI) platform that **democratized AI** in a manner not previously seen.
- Since its launch in November 2022, the tool has reached 100 million users in two months, making it the **fastest-growing consumer application in history**.
- ChatGPT provides a **flexible user-experience**, making adoption easy. It remembers the thread of the dialogue to answer questions and assists with diverse set of tasks such as **composing emails, reports, code, literature review, and processing claims**.
- Benefits of adopting LLMs include **improved productivity and processes, enhanced customer experience, and reduced administrative burden and cost**.

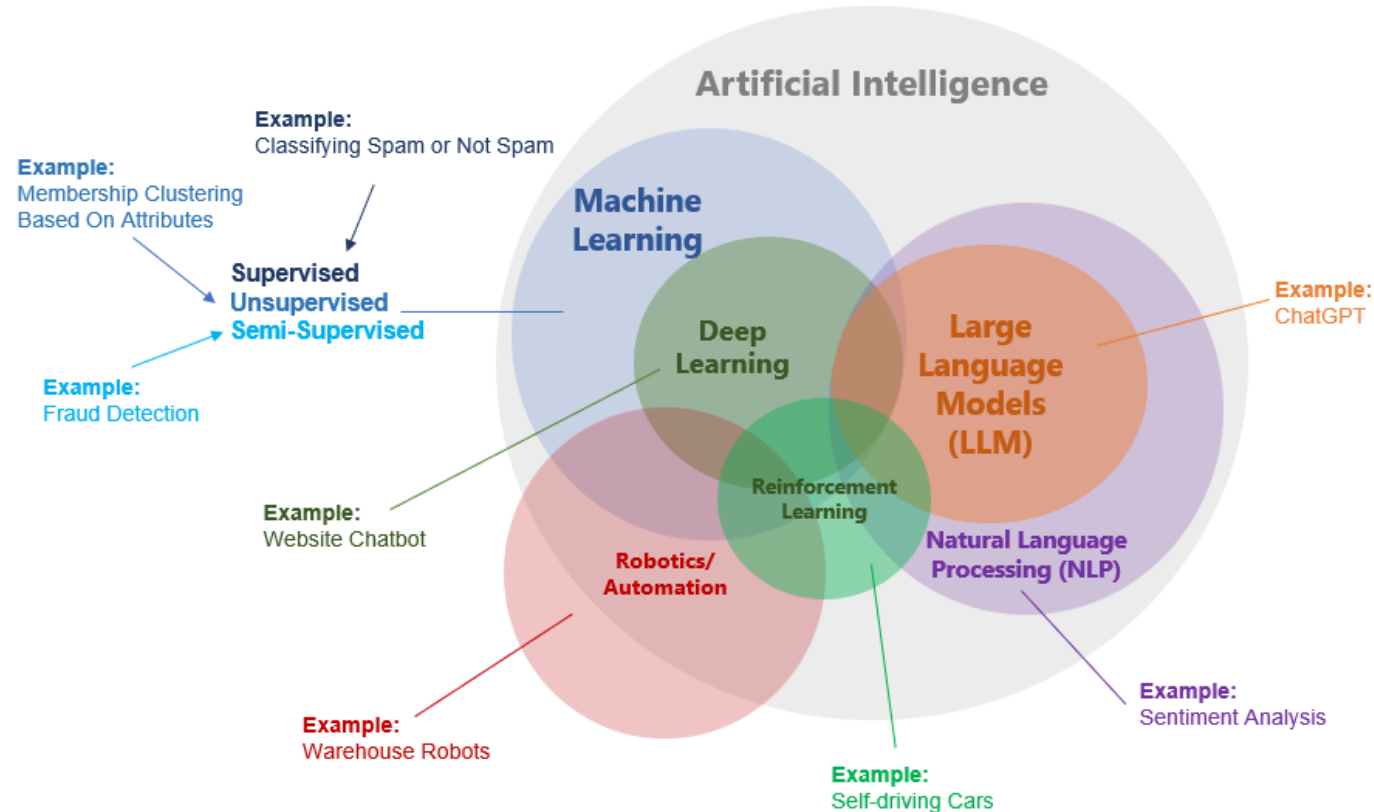
¹ <https://hbr.org/2015/06/robots-seem-to-be-improving-productivity-not-costing-jobs>;

² https://www.key4biz.it/wp-content/uploads/2023/03/Global-Economics-Analyst_-The-Potentially-Large-Effects-of-Artificial-Intelligence-on-Economic-Growth-Briggs_Kodnani.pdf;

³ <https://crsreports.congress.gov/product/pdf/IF/IF10557>

What is AI?

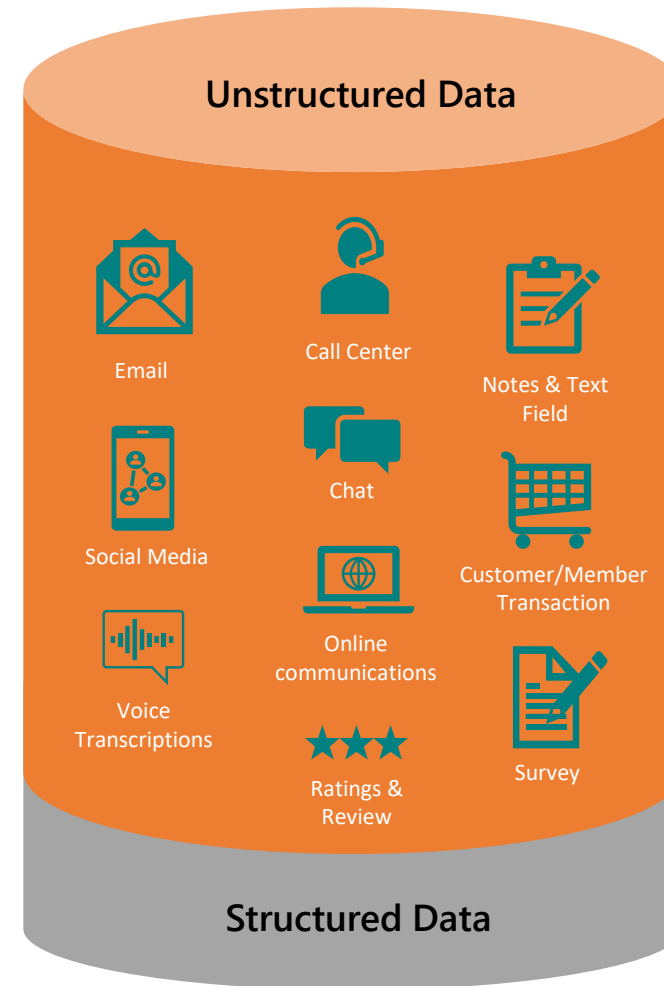
AI is a field that uses computational approach to draw insights from data, make predictions and classifications based on input data
Health systems and health plans are using AI to improve efficiency, deliver more personalized experiences and reduce costs



- The global AI market is currently valued at \$136.6 billion, and this value is expected to reach \$1.81 trillion—over 13x growth—by 2030* (Grandview Research)
- 83% of companies say using AI is a top strategic priority for their businesses (Forbes); Almost 100 million people will be working in the AI space by 2025 (We Forum)

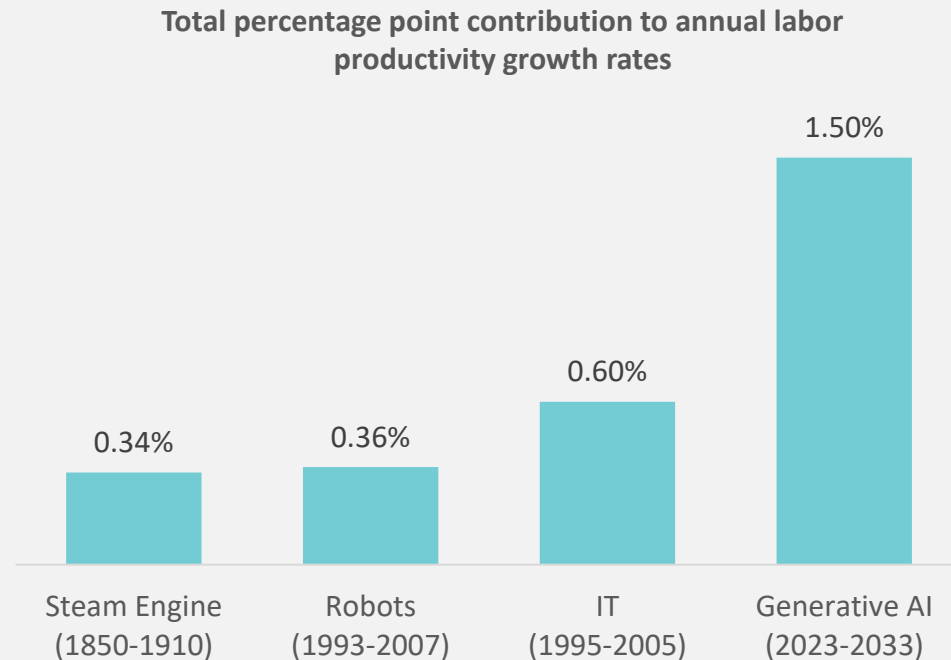
Data is competitive advantage for firms that figure out how to use it

- Majority of data (**80-90%**) is **unstructured** information, an untapped resource for companies to take advantage of
- LLMs allow companies to unlock **novel use cases** and **data insights** as well as improve existing ones
- LLMS can be leveraged to **improve** member/customer **experience**, personalization, **cost** reduction, enhance **productivity** and the bottom line.



Generative AI / Large Language Models (LLMs) are expected to have significant economic impact

Generative AI could have a much bigger impact on productivity compared to other technologies



Note: Commonly cited growth target is around 2%; average annual labor productivity growth rate between 1949 and 2021 was 2.3%³.

- According to Goldman Sachs, generative AI could raise annual US labor productivity growth by +/- 1.5% over a 10-year period following widespread adoption and AI could eventually increase annual global GDP by 7%^{1,2}.
- Roughly two-thirds of current jobs—300mn full-time jobs globally—are exposed to some degree of AI automation.
- Generative AI could substitute up to one-fourth of current work, raising the prospect of significant labor savings.

An increasing number of companies across different domains are leveraging LLMs

Beckers Health IT

Stanford to roll out ChatGPT-like feature for physicians next week

Giles Bruce - an hour ago

➤ AI draft messages for clinicians minimizing administrative work

Bloomberg

Introducing BloombergGPT, Bloomberg's 50-billion parameter large language model, purpose-built from scratch for finance

March 30, 2023

MedMatch Network

Access: How ChatGPT and MedMatch Network Revolutionize Patient Care

MedMatch Network
Integrated Medical Referral Network for Doctors & Patients
Published Feb 19, 2023

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➤ To streamline the process of connecting patients with healthcare providers

TechCrunch

Biotech & Health

Bionic Health raises \$3M for its AI health clinic using GPT-4 and other ML models to design better preventative care

Ingrid Lunden @ingridlunden / 12:35 PM EDT • March 21, 2023

Comment

Health Tech

Doximity rolls out beta version of ChatGPT tool for docs aiming to streamline administrative paperwork

By Heather Landi • Feb 10, 2023 07:00pm

Doximity Artificial Intelligence Fax machines Prior Authorization

Financial Times

Zurich Insurance Group AG + Add to myFT

Insurer Zurich experiments with ChatGPT for claims and data mining

Insurance group is the latest example of a long-established business trying out AI to improve productivity

➤ To extract data from claims ...with the aim of improving underwriting

PR Newswire

Dot Compliance Launches First AI-Based ChatGPT Powered eQMS For Life Sciences

TechTimes

Kahun integrates ChatGPT, bolstering its AI that masters the fundamentals of medicine

Kahun's XAI chatbot for physicians bases its clinical assessment on the company's proprietary map of more than 30 million evidence-based medical insights.

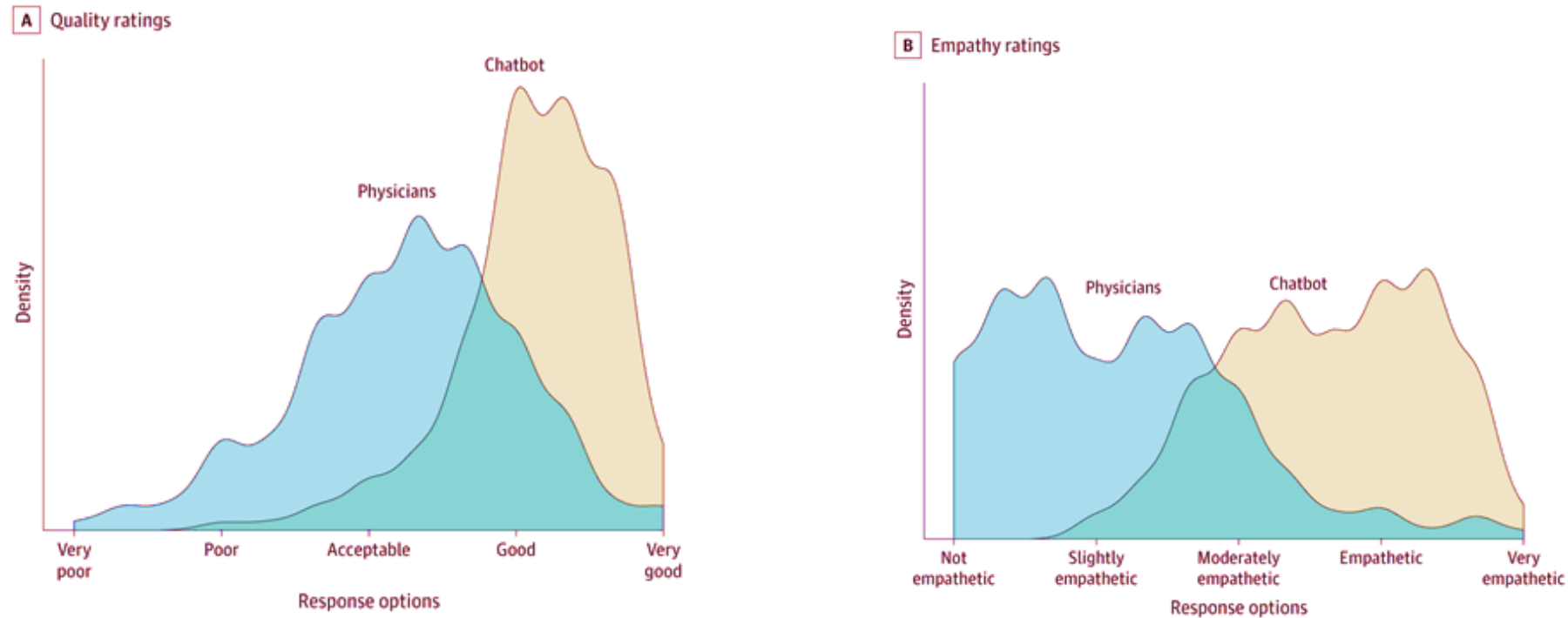
Helvetia

Media releases • 2023 • Helvetia to use ChatGPT for new customer service

Helvetia to use ChatGPT for new customer service

LLMs have the potential to significantly enhance how we work and support our members

Comparing Physician and ChatGPT's Responses to Patient Questions Posted to a Public Social Media Forum

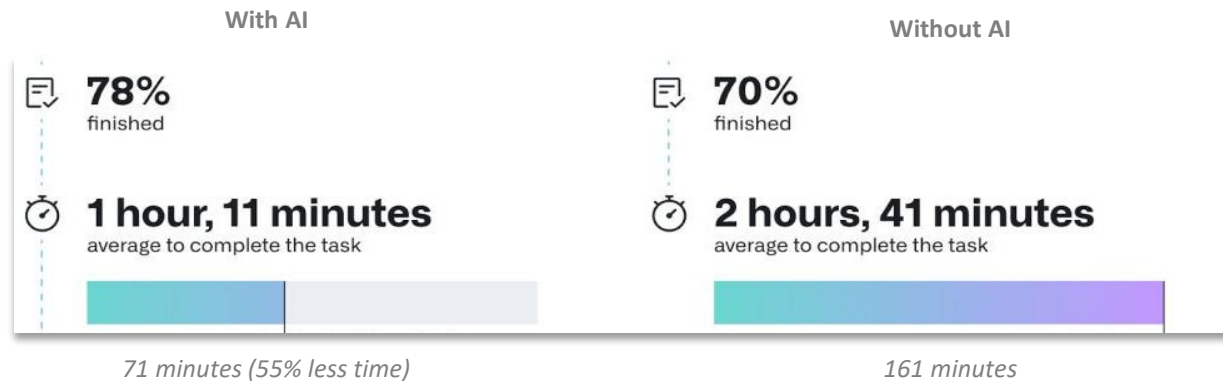


- A team of licensed health care professionals compared physician's and ChatGPT's responses to patient's questions asked publicly on a public social media forum.
- The ChatGPT responses were preferred over physician responses and **rated significantly higher for both quality and empathy**.
- Administrative burden is one of the top reasons why physicians are dissatisfied. Potential to improve member experience while reducing burnout.

LLMs have the potential to significantly enhance how we work and support our members

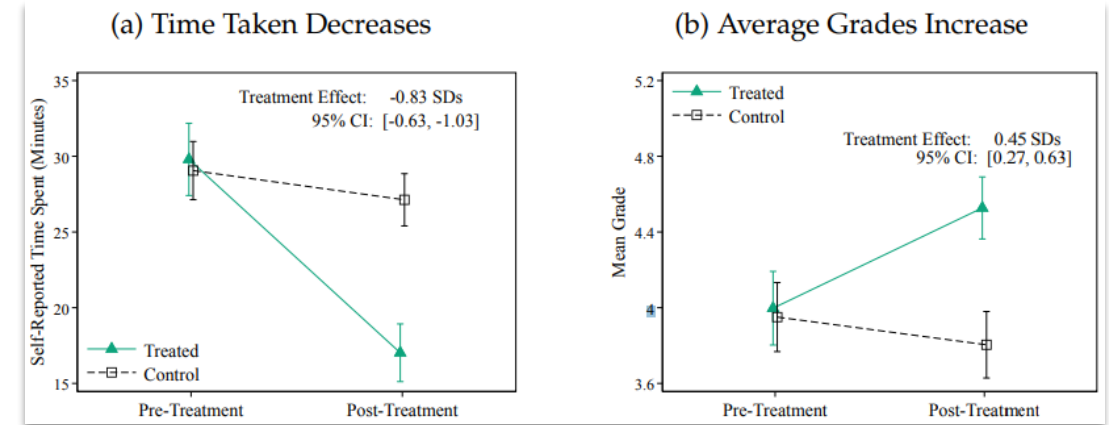
Increases in Productivity and Efficiency

Programming and Coding



Coders who used generative AI tool had higher rate of task completion and had a task-completion time that is **55% faster than those who did not use AI tool***

Writing task (e.g., analysis plan, emails, reports)



Professionals who used ChatGPT in their writing assignment has a task-completion time that is **37% faster** than those who didn't, and the product was rated as **higher quality****

*Peng S., Kalliamvakou E., Cihon P., Demirel M. The impact of AI on Developer Productivity: Evidence from GitHub Copilot. *arXiv preprint arXiv:2302.06590*. 2023. **Noy, S. and Zhang, W., Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence. Available at SSRN 4375283. 2023.

Non-PHI Examples at GuideWell

Survey Analysis

Chat GPT

Summary of process:

Estimated time to complete: **5 minutes**. Filtered out blanks from open-ended responses using Excel and copied responses into ChatGPT prompt. I asked ChatGPT a total of three questions, each of which took approximately **a minute** to generate a response. This results in a huge **time savings** compared to the traditional analysis, with **results closely mirroring** those that I came up with. Overall, this process was **extremely efficient with sufficient results**.

Q1: Technical difficulties

If you selected yes (attended remotely and experienced audio/video issues), please tell us about the audio and/or video issues you experienced.

Prompt: Can you extract the top themes from the responses employees gave in this open-ended question?

ChatGPT: "Based on the responses, the top themes include:

- **Audio issues:** Participants reported a range of audio issues, including low volume, fluctuating volume, audio going out intermittently, audio being choppy or garbled, and audio not being clear.
- **Video issues:** Participants also reported various video issues, including video freezing or lagging, blurry or grainy video, video and audio not being in sync, and video not showing slides or presentations.
- **Technical difficulties:** Technical difficulties were reported, such as sound not working for the first few minutes, long delays while opening the session, and occasional glitches and buffering.
- **Improvement over time:** In many cases, participants reported that audio and video issues improved over time during the meeting.
- **Pre-recorded videos:** Some participants noted that pre-recorded videos played well, in contrast to the live audio and video.
- **Audience engagement:** Audience engagement was mentioned, such as clapping causing audio to go out intermittently.
- **Other miscellaneous issues:** Other issues mentioned include lighting not being optimal for broadcast, the volume of pre-meeting music being too loud, and slides being delayed or not shown."

Q2: Suggestions

Is there anything else you can think of that would make the All-IT Meeting more informative and engaging?

Prompt: Can you extract the top themes from the responses employees gave in this open-ended question?

ChatGPT: "Based on the responses, the top themes include:

- **Guest speakers and presentations from vendors** - several participants requested the presence of guest speakers and vendors to provide technology updates, inspirational stories, and future visions.
- **More interaction and engagement** - some respondents suggested making the meetings more engaging and interactive, with fewer Kahoot games and more real-life examples and videos.
- **Metrics and IT priorities** - a few participants requested updates on IT accomplishments and a list of IT priorities for the year. They also asked for a few minutes of airtime for minority vendor spend and highlighting innovation work.
- **Information sharing and context** - hearing from the business was deemed extremely valuable by some respondents as it provides a context for their work in IT. They requested that the attendees prepare questions beforehand to make the Q&A session better.
- **Raffle and virtual attendees** - a few virtual attendees requested that they be included in the raffle contest.
- **Length of the meeting** - some participants suggested making the meetings longer by 15 minutes.
- **More real-life examples and demonstrations** - a few respondents suggested demonstrating the product instead of just talking about it.
- **Visibility of the speaker** - some participants suggested that it would be nice to see the speaker and the slides they are referencing at the same time.
- **N/A** - some respondents did not have any feedback or suggestions."

Sentiment analysis of suggestions:

Prompt: Can you provide overall sentiment from these responses?

ChatGPT: "The overall sentiment from these responses is positive. There were some suggestions for improvement, such as having more interactive content, making the Q&A session longer, and ensuring virtual employees can participate in raffles. However, many attendees expressed appreciation for the meeting, with some mentioning specific speakers or aspects they enjoyed."

Analysis of 2 open-ended survey questions with about 180 responses took **~1.5 hours**

ChatGPT provided accurate analysis in **< 2 minutes**

In addition, able to generate code and explain complex concepts

Numerous use cases identified across the Enterprise

Non-PHI Examples at GuideWell

Social Media and Member Engagement

Social Media Bot: Processing member twitter interactions using ChatGPT

Using Twitter API, collected over 200 tweets directed @FLBlue to individually analyze sentiment, summarize the tweet, and draft an automated response leveraging ChatGPT

RESPONDING TO MEMBERS

Can you summarize this tweet, classify the sentiment, and draft a response from Florida Blue:

@FLBlue's customer service is a hot plate of garbage. I just wanted the world to know that. Cheers.

Sentiment: The tweet expresses negative sentiment towards the customer service of Florida Blue, calling it "garbage".

Response: Dear [Twitter user], we are sorry to hear that you had a negative experience with our customer service. We always strive to provide the best possible service to our customers, and it's disappointing to hear that we fell short of your expectations. If you could please DM us with more details about your experience, we would like to investigate and see how we can improve. Thank you for bringing this to our attention.

@FLBlue I switched from another insurance company to FB SPECIFICALLY because you covered University OBGYN Sarasota and I wanted them to take care of my pregnancy. now it's turns out you might not be covering them at all! Or any other good OBs in the area. UNACCEPTABLE!!!

Sentiment: The tweeter is upset that Florida Blue may not be covering University OBGYN Sarasota and other good OBs in the area, despite switching to Florida Blue specifically for this coverage. The sentiment is negative.

Response: We apologize for any confusion or inconvenience this may have caused you. Our goal is to provide excellent coverage for our members and we would like to investigate this further for you. Please send us a direct message with your information and we will look into the issue and assist you in finding the best available options for obstetric care in your area. Thank you for bringing this to our attention.

ADDRESSING BUSINESS CHALLENGES

What are the top issues Florida Blue customers are facing?

- Customers of Florida Blue are citing issues with their insurance provider notifying them that they will not renew contracts with their preferred doctors, resulting in the removal of trusted physicians and care providers from the insurer's network,
 - Many are expressing frustration and are upset over losing their trusted healthcare providers, especially OB-GYNs and pediatricians. Complaints range from difficulties finding new doctors to being forced to change providers during pregnancy or in the midst of medical treatment.
- Some customers also cited concerns about the insurance company prioritizing profits over patient care, and specifically mentioned their opposition to the removal of TopLine MD Alliance and Women's Health of South Broward LLC as well as other medical practices.
- Customers are also facing long wait times for claim processing, unreasonable demands, and lack of coverage for routine tests.
- There are also complaints about customer service and the company's lack of response to appeals and inquiries.
- Other frequent problems include difficulty accessing the Florida Blue website or customer service, denial of medication refills.
- There are also complaints of poor customer service, high costs, and a lack of care for women's health issues.

To read and respond to 200 tweets would take **3 hours** of work

When leveraging ChatGPT:
Chat function and sentiment took ~ **20min**
Categorization took ~**30seconds**

Numerous use cases identified across the Enterprise

Non-PHI Examples at GuideWell

Member Call Transcripts

Original:

Yes my name is John. My phone number I have a new phone numbers like to give you a new one. 904-555-1111. That is the new phone number. Okay so I am like really aggravated about this Florida Blue plan right now. I think they active in September. I have never received a medical card. I never received any paperwork. I never received anything for you people so I have not even know that I am. Florida Blue W ever told me back um-hum. Now the sudden that I. I am making a payment for not that I never went to the doctor. I do not even know how to go to the doctor that'll have a card I do not have anything. Called twice about a card. Send new one. This is getting crazy. On this. I requested to card back in December. And UI I requested that one last year. And no one ever sent me anything and then they said they were going to email me. I temporary card to my email which I have never ever. Plan I need to update my address I moved this week. So I do not have that same address is the any more. This the address. Well the old address is 123 Main Street. That is Jacksonville. Okay but I just want to check my mail yesterday and there is no number in there so everybody knows about it never come in the mail I get everything else in the mail but I never got a bill from you guys. . God I just moved like a day. So. And I just went yesterday to check my mail and there is nothing in the mail. So. Okay. All right. Hold on. I got to find. You. Bye-bye. Can I give my email or do I need an actual actual call. Okay. All right. So it is nobody@gmail.comOkay. Okay. Because I love the mail as soon as saw email. My name is displayed on the phone number for the dental. I have an example. I will I will I will phone you. All right. So I can actually go to the doctor. . And you. Is there any way you could tell me how much is payment made what I owe that I have it in news is zero and let me. This is crazy I have a medical. I am eligible for a pencil. One moment all. Very good. I know actually need to speak with the marketplace. Because I need a form. I am trying to get them down there you get the money back. And that is how I found out about the word blue. That is I do not even know I had it. And I got rejected. I was like on my God I got a probably be I do not know I had not served right So I thank you very much. Okay.

Create summary

This text is from a person who is very aggravated with their Florida Blue health insurance plan. They say that they have never received any paperwork or communication from the insurance company, and they have been making payments for months without ever receiving a medical card. The person then talks about how they moved recently and lost their old address, so they have to contact Florida Blue to update their information. They say that they are eligible for a medical card, but they have never received one. The person ends the text by saying that they will call the insurance company to speak with the Marketplace representative.

What is the sentiment of the text

The sentiment in this text is **frustration**. The individual has been trying to reach out to Florida Blue for months, but has **not received any response**. They are **extremely aggravated** about the situation and feel like they have been forgotten.

What are two key statements

1. I have never received anything from you people so I have not even know that I am being billed
2. I requested to card back in December. And no one ever sent me anything and then they said they were going to email me.

What is the next best actions:

Florida Blue should communicate with the individual to update their contact information, provide them with a **new medical card**, and refund any past-due balance on the individual's account.

To read a transcript and summarize it takes ~30 minutes

LLM completed the same task in < 1 minute

Reduction in administrative and data waste:
Reduce time listening to the calls by reading a brief executive summary
Analyze ~100% of all calls rather than only low scoring

Numerous use cases identified across the Enterprise

Non-PHI Examples at GuideWell

Spanish Translation

Introduction

Thank you for agreeing to complete this survey. The purpose of this survey is to better understand Florida Blue members' experiences with getting care when it is unexpected. Your participation will help us support and improve the quality of care for all the members we serve. There are no right or wrong answers, and your answers are completely confidential.

As you respond to this survey, please keep the following definitions in mind:

An **Urgent Care Center (UCC)** is a walk-in clinic that is dedicated to providing immediate medical services to patients for the treatment of non-life threatening illnesses and injuries.

A **Virtual Visit** is an interaction where your doctor provides care for you through electronic communication, without an in-person office visit. Common options for virtual visits include a phone call with video, an online video chat, and secure messaging with your doctor.

Main Annual Survey (unchanging)

1. Which of the following places have you visited for care in the past 90 days (select all that apply)?
 - a. Emergency Room
 - b. Your doctor's office (such as your primary care provider, PCP)
 - c. Virtual visit
 - d. Urgent Care Center
 - e. Other (please specify) _____
- 2a. Prior to receiving care, did you contact your doctor or health care provider?
 - a. Yes
 - b. No
- 2b. (If responded "Yes" above) If so, did your doctor or health care provider direct you to go the place of care you visited?
 - a. Yes
 - b. No

If ER selected,

3. Prior to going to the Emergency Room for treatment, did you think about, or go to, any other places

Introducción

Gracias por aceptar completar esta encuesta. El propósito de esta encuesta es comprender mejor las experiencias de los miembros de Florida Blue al recibir atención médica en situaciones inesperadas. Su participación nos ayudará a apoyar y mejorar la calidad de la atención para todos los miembros a quienes servimos. No hay respuestas correctas o incorrectas, y sus respuestas son completamente confidenciales.

Al responder esta encuesta, tenga en cuenta las siguientes definiciones:

Un **Centro de Atención de Urgencia (CAU)** es una clínica sin cita previa dedicada a brindar servicios médicos inmediatos a pacientes para el tratamiento de enfermedades y lesiones que no representan una amenaza para la vida.

Una **Visita Virtual** es una interacción en la cual su médico le brinda atención a través de comunicación electrónica, sin necesidad de una visita en persona a la consulta. Las opciones comunes para visitas virtuales incluyen una llamada telefónica con video, una videoconferencia en línea y el intercambio seguro de mensajes con su médico.

Encuesta Anual Principal (invariable)

1. ¿Qué lugares ha visitado para recibir atención médica en los últimos 90 días? (Seleccione todas las opciones que correspondan):
 - a. Sala de emergencias
 - b. Consultorio de su médico (como su proveedor de atención primaria, PCP)
 - c. Visita virtual
 - d. Centro de Atención de Urgencia
 - e. Otro (por favor, especifique) _____

Translated PPER annual survey (6 pages) from English into Spanish in ~5min via GPT4 vs ~5h manual translation by person

Specified regional Spanish dialect in ChatGPT prompt to produce a better and more tailored translation for a specific audience

- E.g., translate from English to South American/ Puerto Rican Spanish

- "10-15 mins [review]and it was really accurate"

Numerous use cases identified across the Enterprise

Non-PHI Examples at GuideWell

Image Generation

Generated using the following prompt on [DreamStudio](#):

Photo realistic women with dark hair who hiked to the top of a mountain wearing an orange backpack, a lime green shirt, gray shorts, a lime green head band, and black sunglasses, and is celebrating by throwing her arms up in the air while looking at a forest-filled mountain range

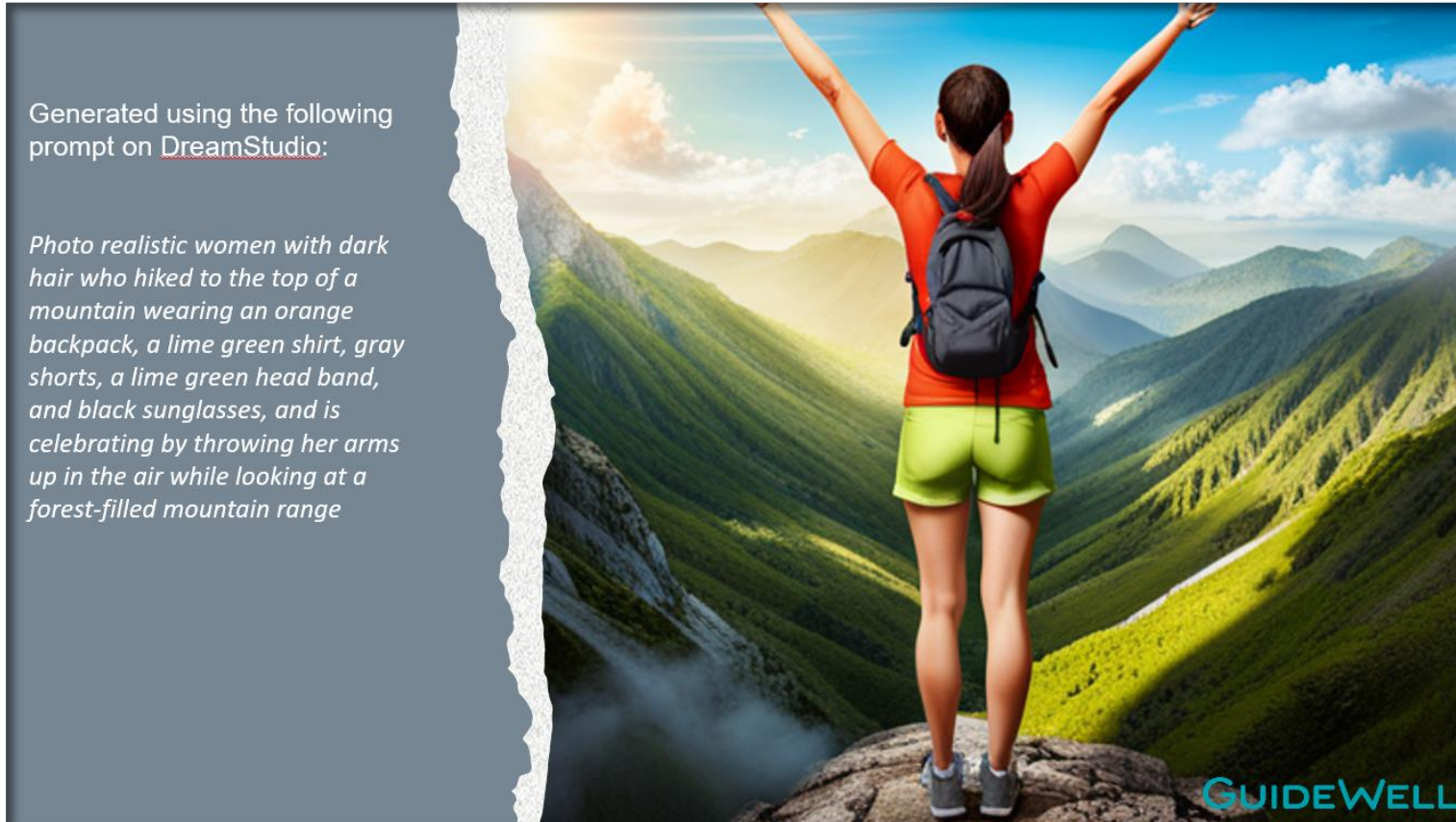
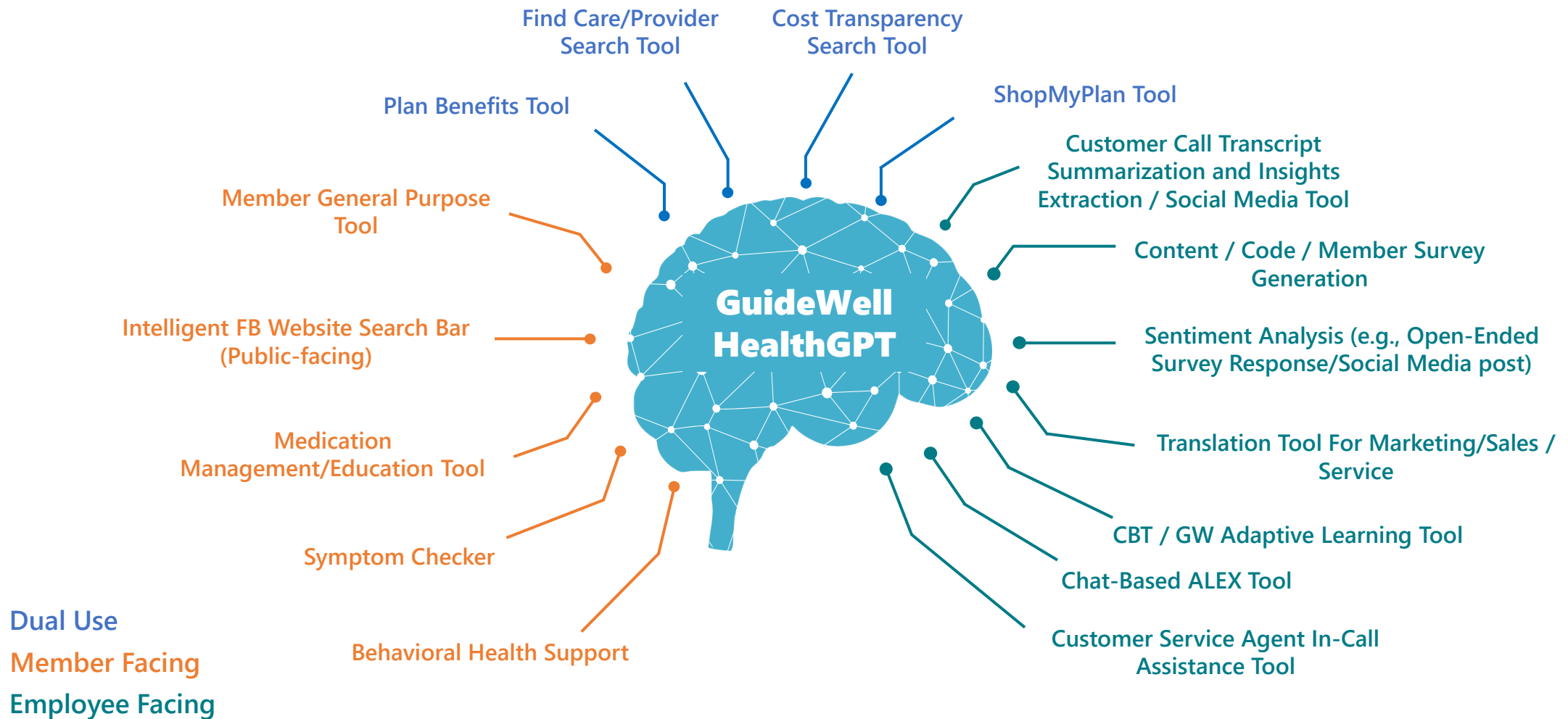


Image created in seconds

Numerous use cases identified across the Enterprise

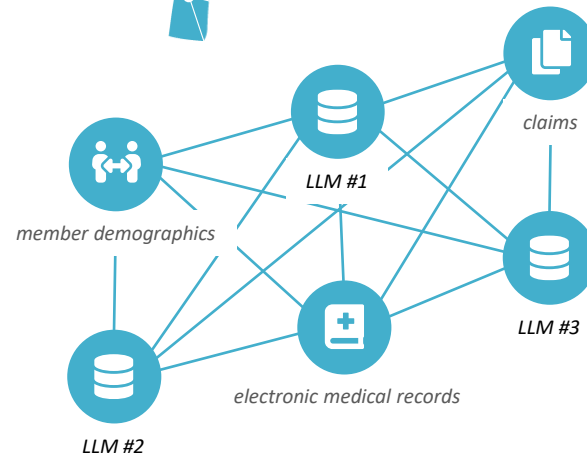
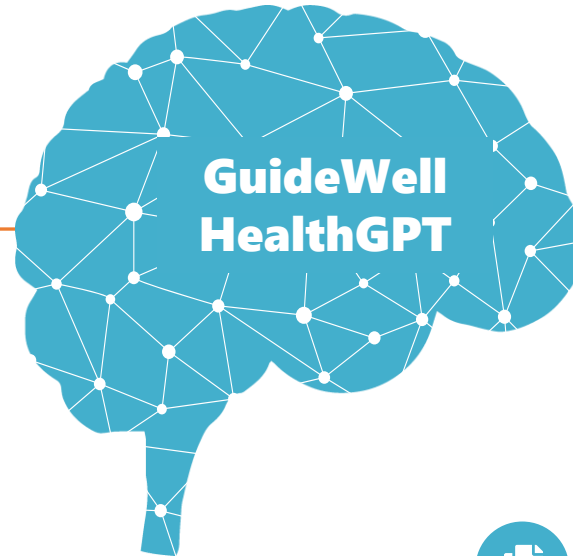
Using data and LLMs to make healthcare simple and efficient



GW HealthGPT

Member General Purpose Tool

Can you tell me when I'm due to refill my prescription Metformin?



GuideWell HealthGPT Response

Hey Anna!

It looks like you missed your refill date for 500 grams of Metformin, which was two days ago.

Is everything okay?

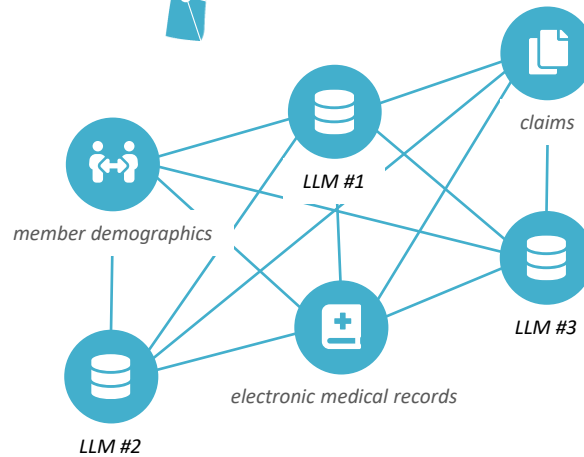
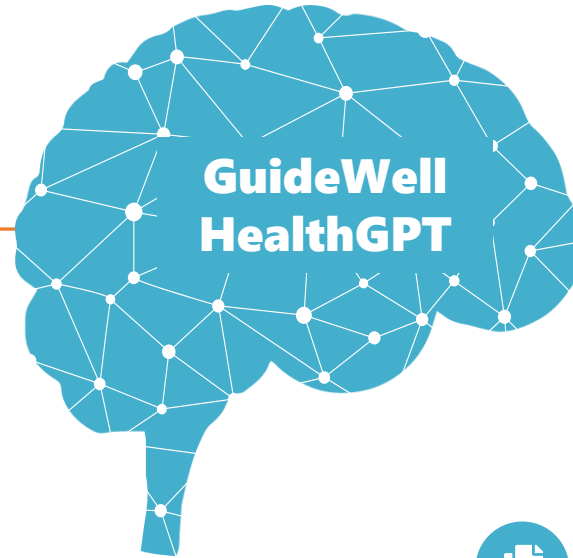
I checked your insurance plan, and it covers free monthly home delivery using Amazon Rx mail order.

Would you like for me to enroll you into the program at no extra cost, so you never miss a refill?

GW HealthGPT

Member General Purpose Tool

Yes, that would be great!
Thank you!



GuideWell HealthGPT Response

Fantastic! You're all set!

You should receive your prescription of 500 grams of Metformin in the next 24 hours.

Your future refills will automatically be delivered to your house this time next month.

I also just emailed you a confirmation for your Amazon Rx order and a transcript of our conversation for your records.

Bringing LLMs to your company

Generative AI tools have the potential to transform entire industries. If enhanced customer experiences, decision-making, innovation, and operational efficiency are important to your company, having a clear and compelling Generative AI strategy today will improve competitiveness for years to come.



Structure: Convene a **cross-functional group** of company leaders (e.g., data science, legal, cybersecurity, marketing, design and other business functions) to help **identify and prioritize the highest-value use cases** and enable coordinated and safe implementation across your organization.



Training: Focus on building technical capabilities and upskilling current workforce. **Hiring the right talent** and **train and educate your existing workforces** will both be important. **Provide clear guidelines** on the use of generative AI tools and offer **ongoing education and training** to keep employees apprised of their risks



Ethics: **Ensure ethical and responsible AI adoption and use.** Develop guidelines and policies to promote ethical and responsible use of AI, addressing concerns such as data privacy, security and accuracy in the models.



Technology: **Enable a modern data and tech stack**, which is key to nearly any successful approach to generative AI. **Assess your company's technical capability** in terms of computing resources, data system, tools, and access to models (e.g., API or open-source) and **design a scalable data architecture** that includes **data governance and security procedures**



Partnerships: **Partnering with the right companies can accelerate execution.** Instead of building out all applications, it could be beneficial to partner with vendors and experts to move more quickly (e.g., partner with infrastructure providers that offer support capabilities such as scalable cloud computing)

Thank you