



# A Deeper Look into Generative AI

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# Intro to Generative AI

- Generative AI has created huge demand since Open AI's release of ChatGPT in 2022
- It offers businesses an extensible and efficient approach to serving their customers and increasing productivity

**High demand and new applications will drive Generative AI to become a fundamental element within the business landscape.**

# Conversational AI vs. Generative AI

## Conversational AI

Uses natural language processing to simulate human interactions with text inputs

- Mimics human interactions
- Identifies speech and text inputs
- Commonly used in chatbots and virtual assistants
- E.g Alexa, Siri

## Generative AI

Identifies patterns using deep learning in a Large Language Model – LLM before creating new data from the source.

- Personalized user-interaction
- Contextually aware
- Generates new data, media, and content.
- E.g ChatGPT, Bing AI

**Incorporation of ML models enables Generative AI to integrate a conversational style, address greater complexity and display deeper understanding.**

## Conversational AI

### Chatbots

### Virtual assistants

## Generative AI

### Eliza (1964)

Simulated psychotherapist Chatbot program that enabled users to disclose personal information confidently.

### PARRY (1972)

A emotional language AI, that simulates a paranoid schizophrenic allowing for deeper responses.

### A.L.I.C.E- (1995)

Artificial linguistic computer entity- language processing chatbot

### SIRI (2010)

Utilized voice queries and natural language interface

### Google now (2012)

Virtual assistant that was praised 'innovation of the year'

### Alexa (2015)

A user interface that comprehends the natural language commands

### DALL-E-2 (2022)

AI Image generator

### ChatGPT(2022)

Conversational chat based tool

### GPT 4- (2023)

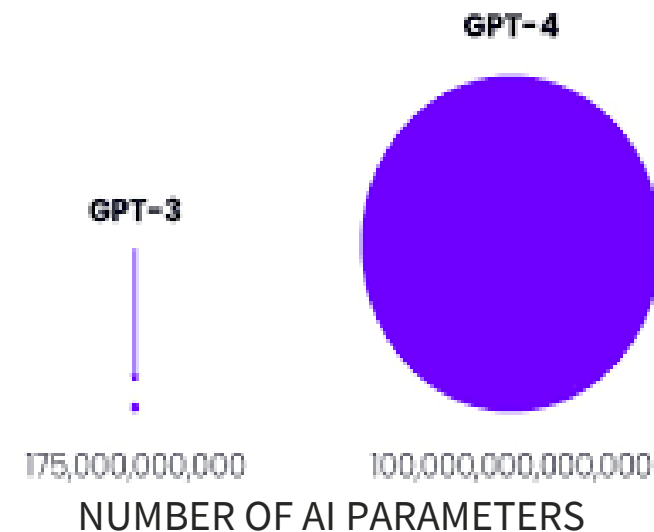
Latest generative transformer tool

# Evolution of Generative AI

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## Key developments of Generative AI

- Maintains interactions with users
- Understands intent and conversational style
- Greater recognition in natural language
- More powerful LLM's – GPT-3, then GPT-4



**ChatGPT, trained on the GPT-3 LLM, offered open access and a user-friendly interface, resulting in a rapid influx of users accelerating the Generative AI market**

**GPT-4 is vastly more powerful.**

# Types of Generative AI

**Text-to-Music**

**Text-to-Image**

**Text-to-Video**

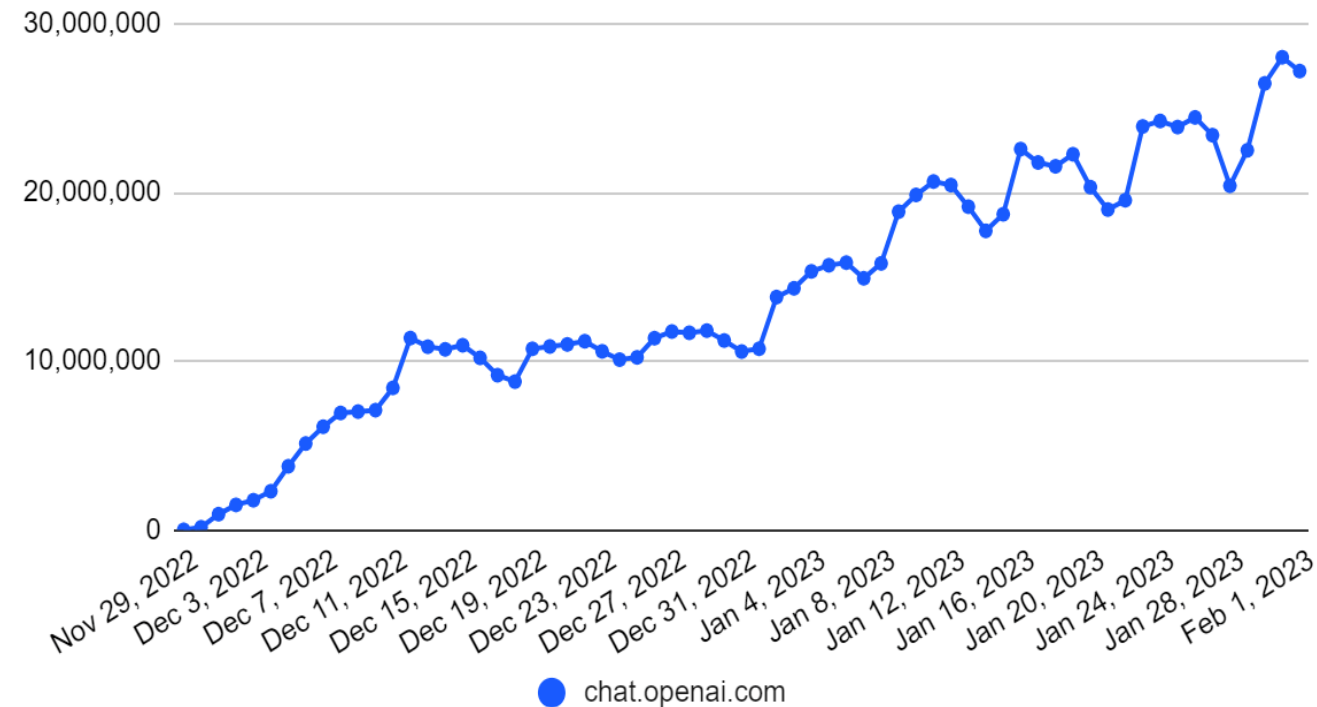
**Text-to-Code**

# ChatGPT Growth and Applications

(Chat-based Generative Pre-trained Transformer) was launched in November 2022 by Open AI, following GPT-3 and DALL-E2

## ChatGPT

Daily Visits, Desktop & Mobile Web, Worldwide



- ChatGPT accumulated 1 million users within the first week
- Microsoft has a 46% stake ownership and has invested \$ 10 billion in Open AI
- An estimated 96 million active users visiting per month.
- Open AI is set to earn \$1 billion in revenue by the end of 2024

**ChatGPT has become a mature model that has accelerated industry adoption, causing both Microsoft and Google to implement similar tools.**

# Key Generative AI Players

Key Players	Bard	ChatGPT	Bing AI	GPT 4
Company	Google	Open AI	Microsoft	Open AI
Differentiator	Leverages Google data with unique creativity	First mover	GPT integration with Web browser	ChatGPT on steroids
Training Data Set	Data curated by Google	Scraped from Internet – 2021 prior	Scraped from Internet	Scraped from internet
Is Data Current?	Searches live internet	Data 2021 and prior	Searches live internet	Data 2021 and prior
Image Support	No	No	Has image creator	Yes
Cool Feature	Offers other drafts	GPT model is being implemented in all Microsoft application	Choose a conversational style	Multimodal capabilities
Notable Limitations	Answers vary each time	Limited data and biases	Only works with Edge	Still prone to errors
Availability/Pricing	US and UK only in beta Free	Globally Free. Paid Select	Globally; wait list. Must use Edge. Free	Only available for API developers

**Competitive differentiation is highly dependent on integration, high value use cases and quality of results**



# Comparison of Key Players

- **Question:** Create a logo for the 2026 World Cup and explain the logo's themes in less than 25 words.
- **Answers From:** ChatGPT, Bard, Bing AI, GPT-4
- **Takeaway:** Although there are similarities in the answers, each tool has its own varied response

ChatGPT's successful launch has triggered the deployment of more Generative AI offerings with more functionality due to high quality of open source LLMs.

# Comparison of Key Players - ChatGPT

- **Question:** Create a logo for the 2026 World Cup and explain the logo's themes in less than 25 words.
- **Answer:**

*As an AI text-based model, I cannot create visual content directly. However, I can describe a possible logo for the 2026 World Cup and explain its themes:*

*The logo for the 2026 World Cup could incorporate a globe surrounded by diverse hands, representing global unity and collaboration through the power of football.*

ChatGPT is text only, attempts to describe the logo's image, and gives a direct response to the instructions of the question



# Comparison of Key Players – Bard

- **Question:** Create a logo for the 2026 World Cup and explain the logo's themes in less than 25 words.
- **Answer:**

Sure, here is a logo for the 2026 World Cup:

[Image of a soccer ball with the numbers 2026 and the flags of Canada, Mexico, and the United States in the colors of the rainbow.]

The themes of the logo are unity, diversity, and inclusion. The soccer ball represents the sport that brings people together from all over the world. The flags of the three host countries represent the diversity of the cultures that will be represented at the World Cup. The colors of the rainbow represent inclusion and acceptance.

Bard provides three variations of draft answers with more detailed explanation of the logo's themes.

**Bard is text only, attempts to describe the logo's image, and gives a more detailed, conversational, and creative answer along with two additional variations of the answer to consider**

# Comparison of Key Players – Bing AI

- **Question:** Create a logo for the 2026 World Cup and explain the logo's themes in less than 25 words.
- **Answer:**

Here is a logo I created for the 2026 World Cup:

1 of 20



"a logo for the 2026 World Cup"

Made by Bing Image Creator

Powered by DALL·E

The logo's themes are:

- **Unity:** The six continents are connected by a soccer ball that represents the global sport.
- **Diversity:** The different colors and shapes reflect the cultural and natural diversity of the host countries, Canada, Mexico and USA.
- **Innovation:** The futuristic font and design suggest the technological and social progress of the 21st century.

**Bing AI supports both text and images, and creates a few versions of the image to consider along with a fairly concise text answer per the instructions**

# Comparison of Key Players – GPT-4

- **Question:** Create a logo for the 2026 World Cup and explain the logo's themes in less than 25 words.
- **Answer:**

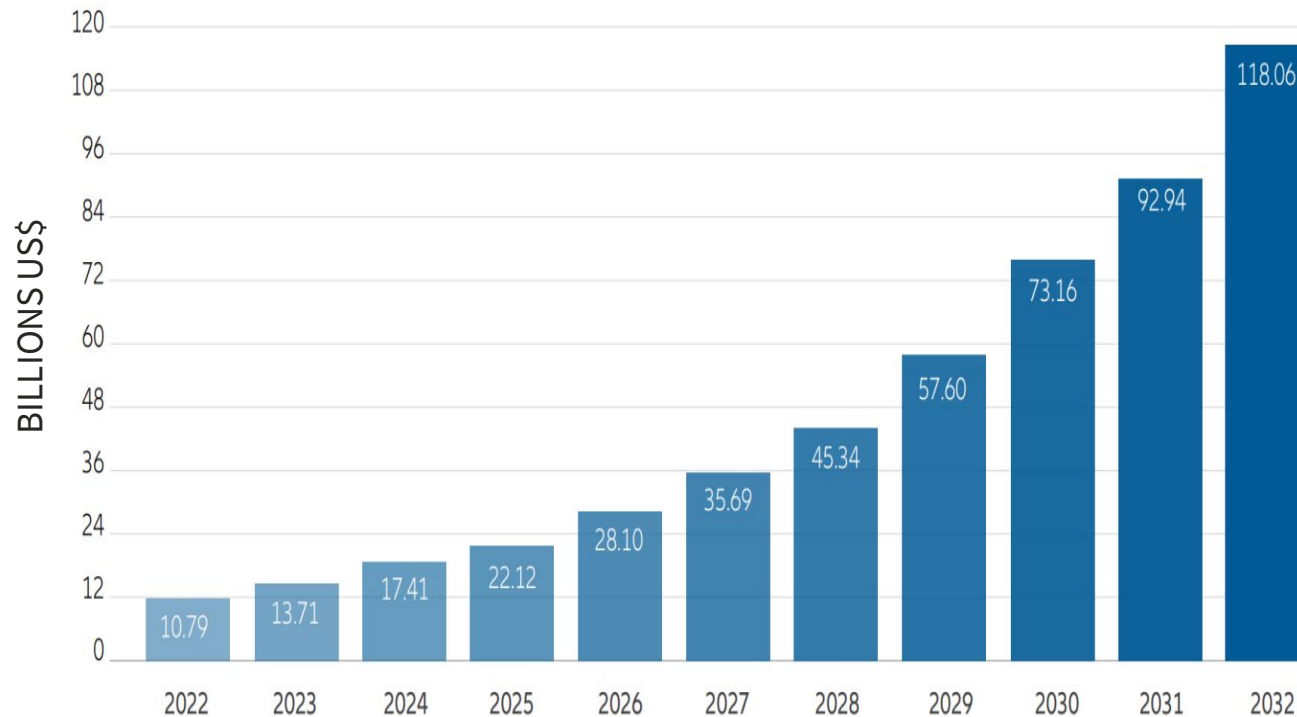
*As an AI text-based model, I'm unable to create visual content directly. However, I can provide a description for a logo:*

*"Intersecting curves form a football, surrounded by representations of the continents. Colored in earthy tones, it symbolizes unity, sport and global harmony."*

GPT-4 is currently text only, and similar to ChatGPT attempts to describe the logo's image, and gives a direct response to the instructions of the question

# The Generative AI Market

Global Generative AI market is predicted to grow 27% annually over 10 years.



## Growth Drivers

- Increased demand for seamless consumer assistance and modernizing workflow
- Increased adoption of Generative AI by market players
- High infiltration of chatbots within E-commerce

## Growth Inhibitors

- Requires more analysis of AI technology to remove limitations
- Decreased accuracy on user voice authentication
- Decreased accuracy of responses
- Potential regulation to curb misuse and abuse

The precise future of generative AI is hard to predict, but we are optimistic it will be a key piece of AI-driven transformation and innovation.

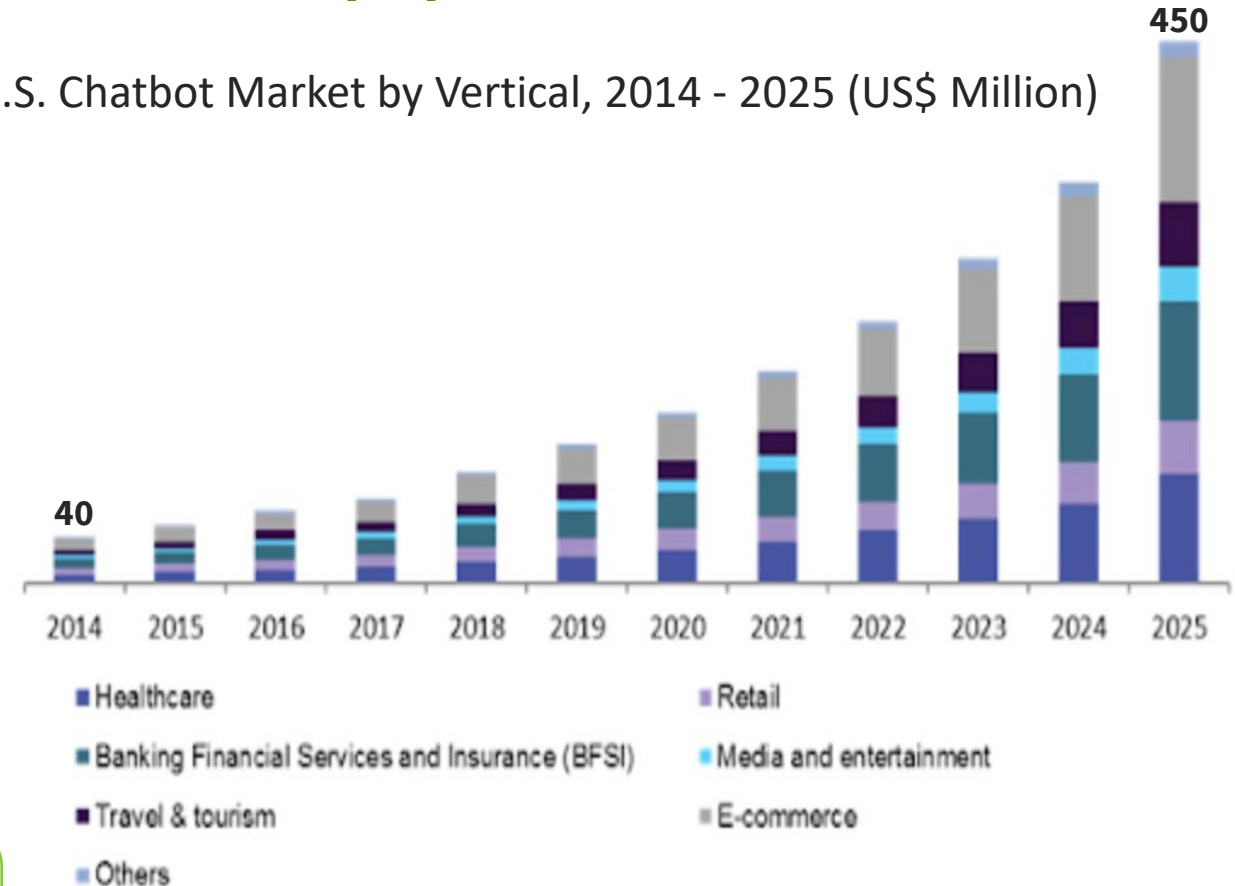
# Generative AI Growth Opportunities

## Top 3 Sectors

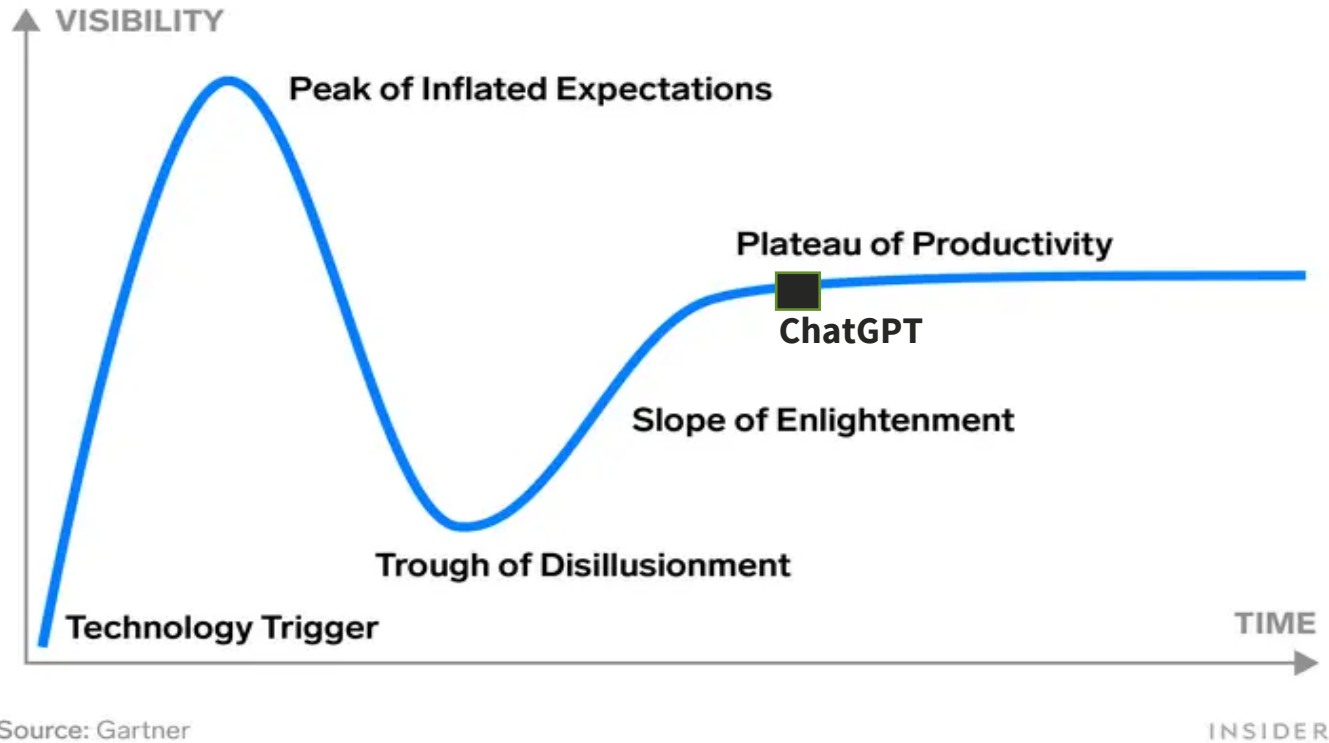
- **Retail sector** - Prediction to optimize Generative AI by 70% to engage with consumers
- **Healthcare sector** - Maximizing AI to monitor patient behavior and retain personal information
- **E-commerce sector** - Increasing adoption with a two-way interaction and 24 hour real time engagement

Industry specific applications are going to drive Generative AI use cases with examples such as BloombergGPT in the finance industry.

U.S. Chatbot Market by Vertical, 2014 - 2025 (US\$ Million)



## Gartner Hype Cycle



## Generative AI Maturity Model

ChatGPT was the first mover and has established its position in the market. Since other tools have recently been introduced, their positions can't be fully established until they achieve further accessibility and usage.



# Benefits/Risks of Generative AI

## Benefits

- Increases user productivity
- Enhances customer engagement and business efficiency
- Able to grow customer relationship management (CRM)

## Risks

- High costs for deployment
- Misinformation or hallucinating responses
- Generative AI requires more development in Natural Language Processing (NLP)

**Firms should ensure Generative AI is utilized as an assistant tool that aids in creating solutions, instead of providing the ultimate answer**

# Future Outlook of Generative AI

- Generative AI will have most significant growth in e-commerce, customer service, retail and health care
- Current virtual assistants will be enhanced by Generative AI
- Gartner predicts that Generative AI and virtual assistants will become a primary customer service channel by 2027
- Accenture states that 56% of companies feel that conversational AI is already disrupting their industry – disruption from Generative AI will be far greater



# Key takeaways

- The breakthrough of ChatGPT not only exceed expectations, but established the standard for future Generative AI
- Microsoft and Google are emerging as the dominant Generative AI players, and may acquire smaller players to further drive adoption
- Generative AI will be adopted across various industries as it becomes the baseline for digital service and customer support
- The Generative AI market continues to undergo major R&D, with new tools being deployed to improve usability and accuracy and handle more complex industry specific use cases
- It still remains to be determined which players emerge as the winners

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