Generative AI Explained by AI

WHAT IS GENERATIVE AI?

VISUALLY EXPLAINED... BY GENERATIVE AI

Generative artificial intelligence (AI) has dominated headlines and earnings calls over recent months. With access to these technologies increasing day-by-day, we asked AI to help demonstrate the power and influence of this new tech trend.

This robot—and all the visuals in this infographic, including icons - were generated using AI software like MidJourney and DALL-E.

The text captions were also generated using AI (ChatGPT).

This image was created on Midjourney using the following text prompt:
a robot head, portrait, no background, artificial intelligence, minimalist and white aesthetic, futuristic, digital, realistic, 4K

Generative AI is a type of artificial intelligence (AI) that uses machine learning algorithms to create new and original content like images, videos, text, and audio.

1 Forming a Database
A neural network, consisting of various information or media files like images, text, data, sounds, etc., forms the basis of artificial intelligence.

2 Inputting a Prompt
The user provides the AI with a description or sample of the desired content...

Prompts can be any user-submitted material, like words, numbers, or photos.

3 Generating Content
...and the AI uses its neural network to generate new examples that are similar to the ones it has trained from.

This image was created on Midjourney using the following text prompt:
a technical illustration of a woman sitting behind a desktop computer on a long table, isometric view, 3D rendering, realistic, 4k
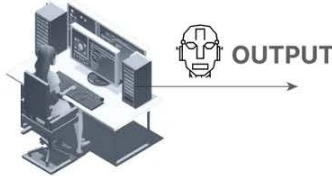
Examples of Generative AI Technology

ChatGPT
text generation AI

INPUT PROMPTS

"Write a limerick about data taking over the world. Include the word: egg"

OUTPUT

"Data taking over the world, it's true
It's growing like an egg that's due
It's everywhere we go
It's taking over slow
But it's the future, there's nothing we can do."

Real-Life Applications of this Platform
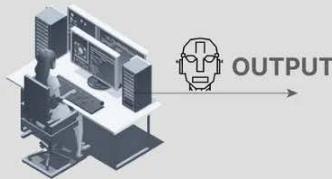• *communications, journalism, publishing, creative writing, writing assistance*

Midjourney
image generation AI

INPUT PROMPTS

• a rabbit wearing a sunhat
• Santa Claus in a blue outfit
• a watercolor of a red
icycle in front of a waterfall

OUTPUT

Real-Life Applications of this Platform
• *advertisements, published illustrations, corporate visuals, novel image generation*

Codex
computer coding generation AI

INPUT PROMPTS

"Write script to change a website's background color in Python"

OUTPUT

Here's an example script that uses the 'requests' and 'BeautifulSoup' libraries in Python to change the background color of a website:

```
import requests
from bs4 import BeautifulSoup

# send a GET request to the website
response =
requests.get("https://yourwebsite.com")

# parse the HTML content
soup = BeautifulSoup(response.content,
'html.parser')

# locate the element you want to change
the background color of
element = soup.find('body')

# add a new style attribute to the element
element['style'] = 'background-color:
pink;'

# print the modified HTML
print(soup.prettify())
```

Real-Life Applications of this Platform
• web design, software development, coding/scripting, technology

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AI – The Frontier of the Future

As its name implies, generative artificial intelligence (AI) is capable of "generating" new and original content like text, audio, images, and videos.
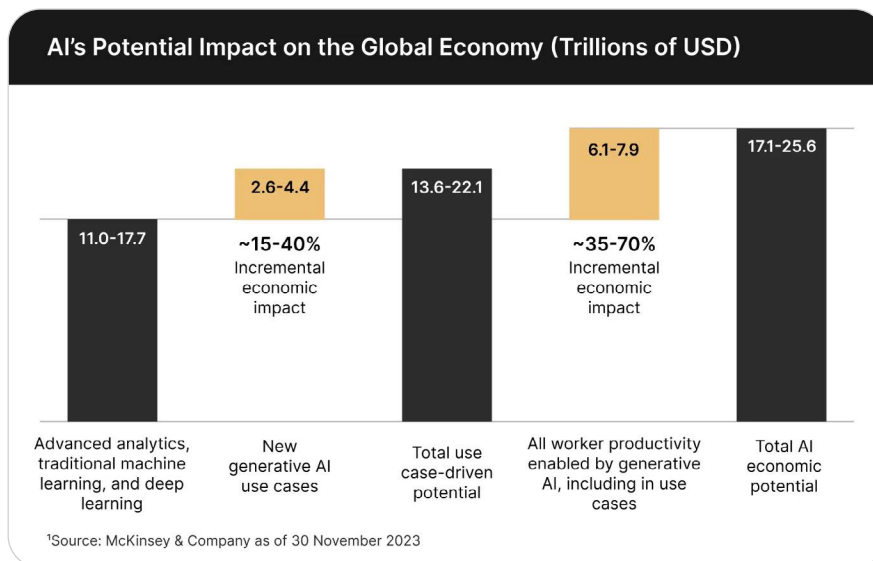
Generative AI is underpinned by machine learning, a process by which computers "learn" through analyzing vast quantities of data, autonomously recognizing patterns without external human input.

Generative AI is now capable of performing a wide set of tasks ranging from:

- Image Processing and Creation
- Natural Language Processing
- Speech Recognition
- Coding

With countless use cases, generative AI has the potential to revolutionize the economy and the many ways in which the world works.

Labor productivity gains from generative AI are expected to deliver at least $6.1 trillion in incremental value to the global economy annually, according to economic and consultancy estimates.[1]

AI's Potential Impact on the Global Economy (Trillions of USD)

11.0-17.7	2.6-4.4	13.6-22.1	6.1-7.9	17.1-25.6
	~15-40% Incremental economic impact		~35-70% Incremental economic impact	
Advanced analytics, traditional machine learning, and deep learning	New generative AI use cases	Total use case-driven potential	All worker productivity enabled by generative AI, including in use cases	Total AI economic potential

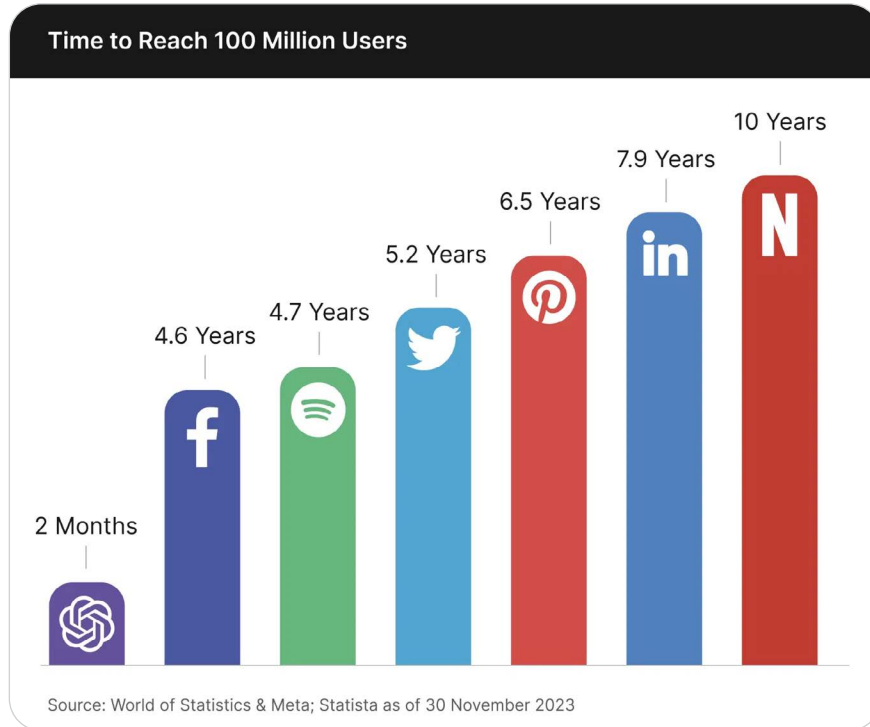[1]Source: McKinsey & Company as of 30 November 2023

Digital Disruption

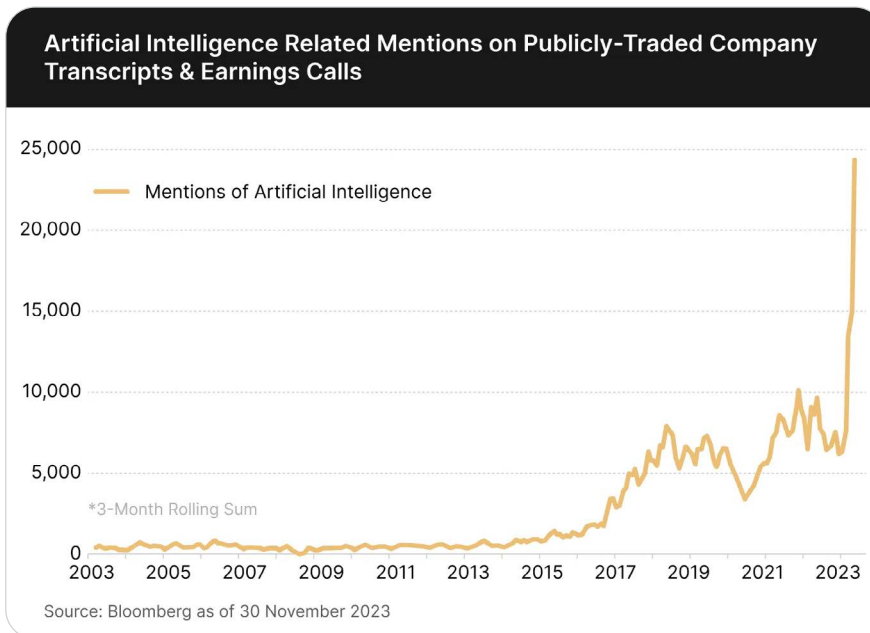ChatGPT, GPT-3, DALL-E, Stable Diffusion, and other generative AI products have taken the world by storm.

ChatGPT, arguably the most recognizable and popular platform amongst generative AI providers, is a chatbot that produces content based on user input.

Since its launch in 2022, ChatGPT reached its first milestones of 1 million users in just five days and 100 million monthly users in only two months.

Time to Reach 100 Million Users

2 Months

4.6 Years

4.7 Years

5.2 Years

6.5 Years

7.9 Years

10 Years

Source: World of Statistics & Meta; Statista as of 30 November 2023

Capture the Chatter

Artificial intelligence (AI) continues to revolutionize industry; 177 companies within the S&P 500 cited "AI" during their last quarterly earnings call.

Artificial Intelligence Related Mentions on Publicly-Traded Company Transcripts & Earnings Calls

— Mentions of Artificial Intelligence

25,000

20,000

15,000

10,000

5,000

*3-Month Rolling Sum

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2003   2005   2007   2009   2011   2013   2015   2017   2019   2021   2023

Source: Bloomberg as of 30 November 2023

Our G**enerative Artificial Intelligence ETF (WISE)** seeks to track the Solactive Generative Artificial Intelligence Index (SOLGAIN), which identifies **40 companies that derive their revenues from either:**

- **Artificial Intelligence**
- **Data Analytics & Big Data**
- **Natural Language Processing**
- **Artificial Intelligence-Driven Services**

WISE seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the SOLGAIN Index.