
A Steam Engine For the Mind

Perspectives on Generative Artificial Intelligence

First Quarter 2023

[Hayflower Partners](#)

AI:Computer :: Steam Engine:Bicycle

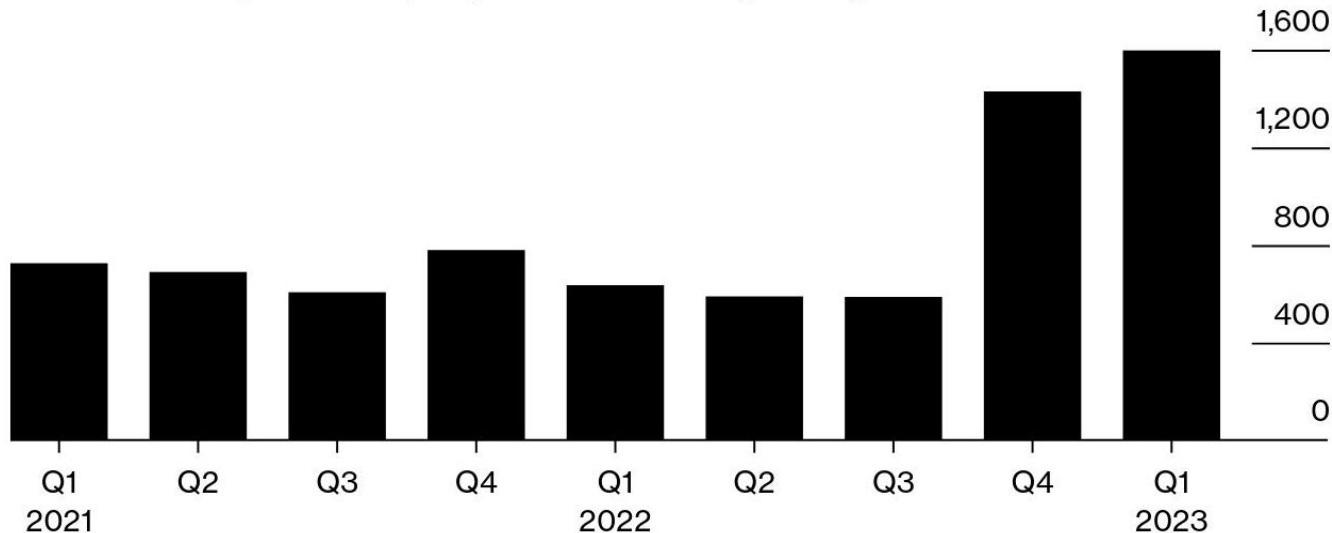


“Steve Jobs had this beautiful, beautiful line, right, which is ‘computers are like the bicycles for the mind.’ We now have an upgrade, we have **a steam engine for the mind.**”

★ Satya Nadella, Microsoft CEO

AI is a Top Investor Comms Priority

■ Artificial intelligence and synonyms mentions during earnings and sales calls



Source: Bloomberg

Note: Based on earnings transcripts analysis for S&P 500, Nasdaq 100 and Stoxx Europe 600 as of May 12

Bloomberg

of AI Mentions



50



49



46

Generative AI is Driving Shareholder Value Creation

Google Builds on Tech's Latest Craze With Its Own A.I. Products

At the company's annual conference, Google demonstrated dozens of products and features that work with artificial intelligence, along with new phones.

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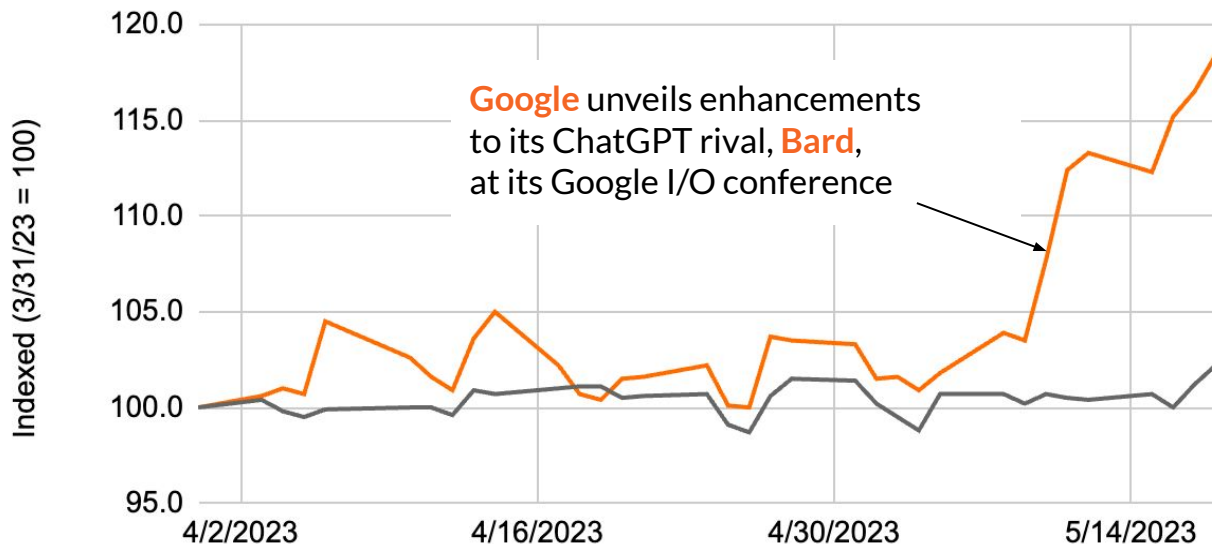
You Can Now Try Google's Bard Chatbot, an Alternative to ChatGPT

The generative AI tool is available in English in many parts of the world. Japanese and Korean are also here, and more languages are on the way.

Stephen Shankland
May 12, 2023 11:30 a.m. PT

3 min read

— Alphabet — S&P 500 Index



Generative AI is Driving Shareholder Value Destruction

Earnings Results

Students are turning to ChatGPT for study help, and Chegg stock plummets more than 30%

Last Updated: May 2, 2023 at 7:40 a.m. ET
First Published: May 1, 2023 at 4:53 p.m. ET

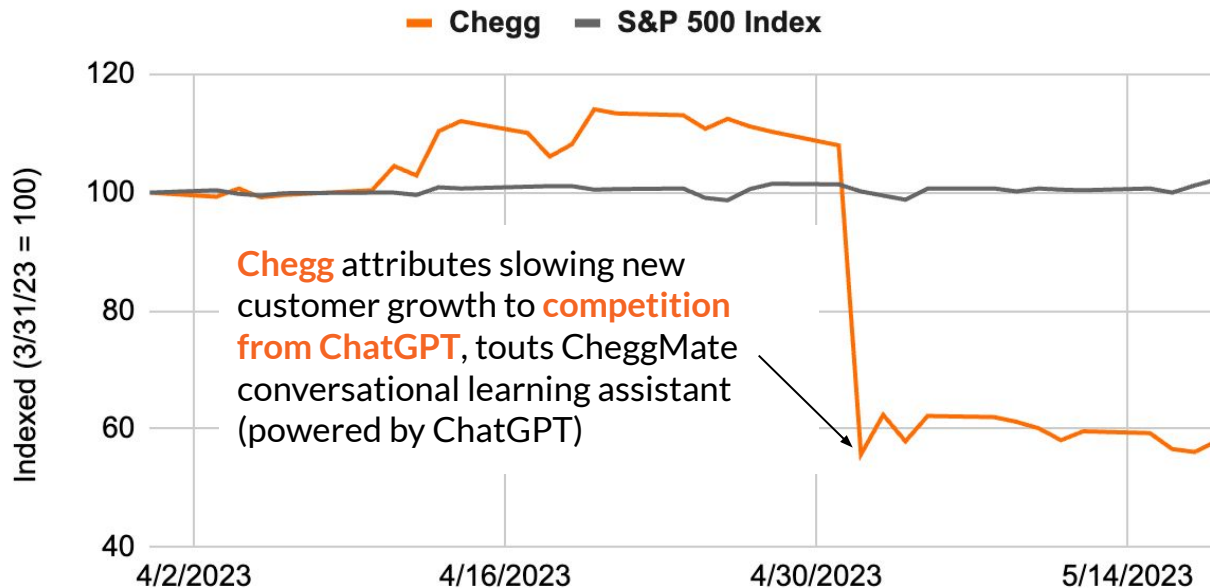
By Jeremy C. Owens (Follow)

Another post-earnings dive for online-education company sends shares toward their lowest price since 2017, CEO says 'a significant spike in student interest in ChatGPT' has hurt subscriber growth

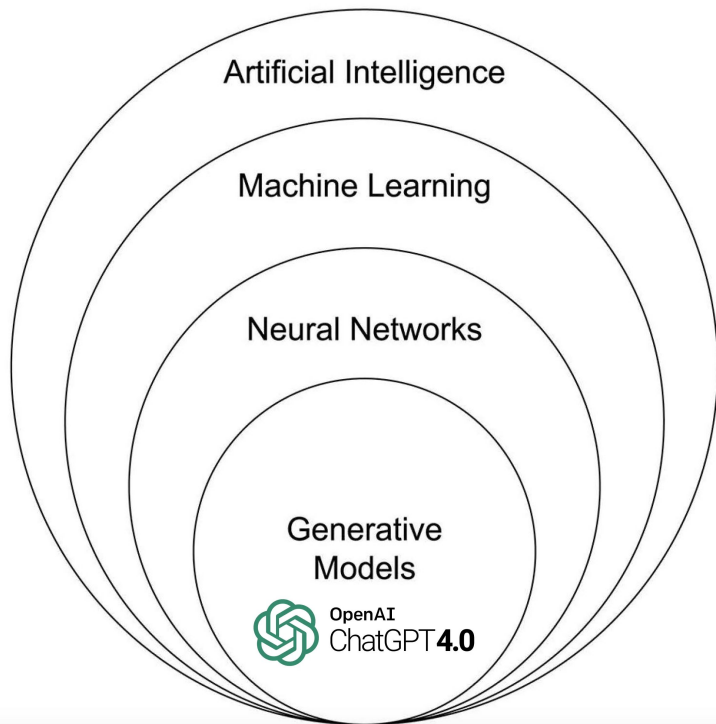
TECHNOLOGY EARNINGS REPORT

Chegg Stock Tumbles Close to 50% After ChatGPT Warning. Not Everyone Can Be an AI Winner.

By Callum Koonin (Follow) Updated May 2, 2023 10:10 am ET / Original May 2, 2023 7:25 am ET



Where does ChatGPT Fit In?



Artificial Intelligence (AI) is the ability of a computer program or machine to solve problems, make or suggest decisions, or perform tasks that have traditionally required human input

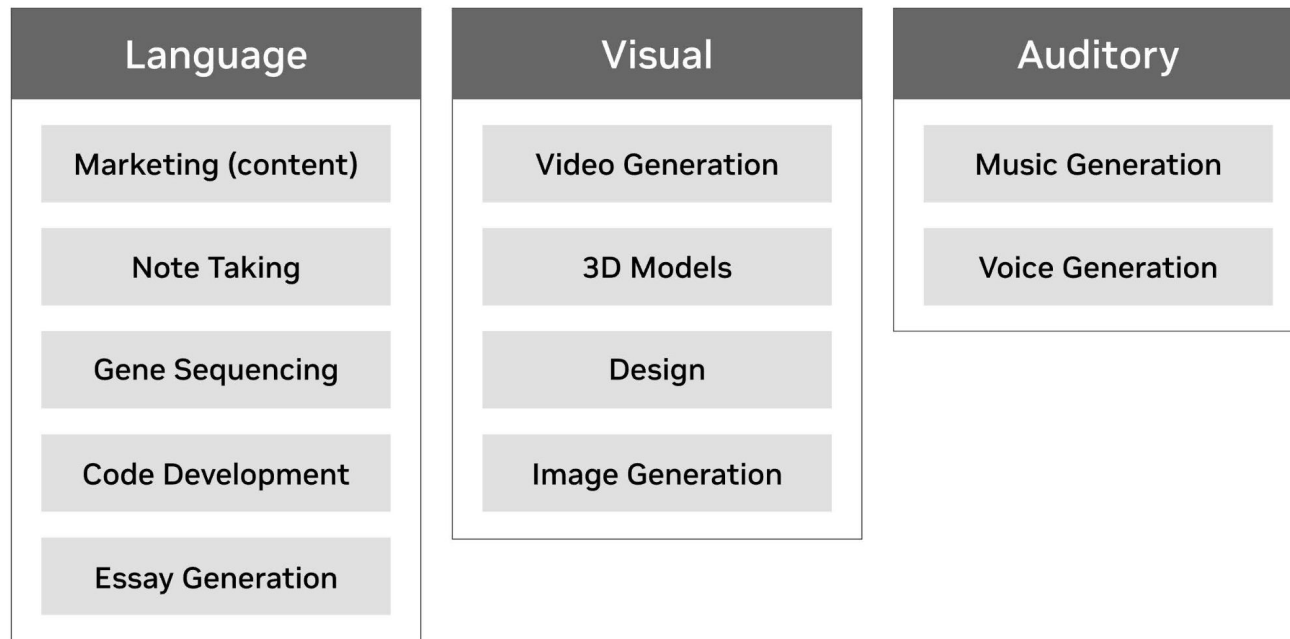
Machine Learning (ML) is a subset of AI algorithms which learn without being explicitly programmed with rules

Neural Networks are a type of ML patterned after the network of neurons present in the human brain which are effective at tasks such as image classification and speech recognition

Generative Models such as **GPT 4.0** use neural networks to identify the patterns and structures within existing data to generate new and original content

Generative AI Model Applications

Generative AI models can take inputs such as **text, image, audio, animations, 3D models**, and **code** and generate **new content**

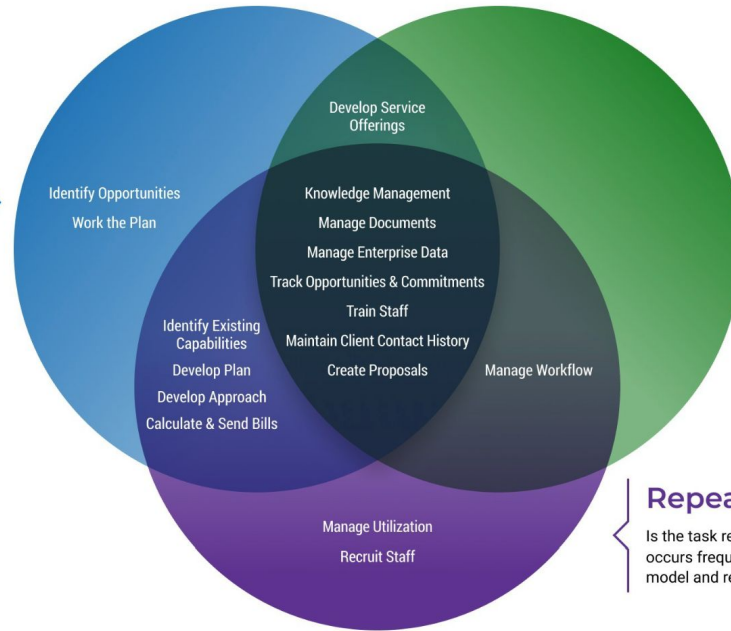


Generative AI Business Use Cases

In the business context, GenAI is most suitable for **generative**, **valuable**, and **repeatable** processes such as data management and training

Generative or conversational

Is this the sort of work a generative AI can do? Does it involve conversation or creation of new material? AI should probably not make decisions at this stage, but it can present/sort information and answer questions.



Valuable

The capabilities of the generative AI would meaningfully reduce manual effort in completing a task. Tasks that require extensive permissions, highly specific or contextual expertise, or could expose the organization to risk would not generally fall into this category.

Repeatable

Is the task repeatable such that it occurs frequently enough to train a model and recoup initial investment?

What Can't Gen AI Models Do Well?

Gen AI models currently lack the general intelligence required to **set goals** and **strategies**, **understand cause and effect**, or **comprehend new data**

Set goals/strategies

Humans define decisions, gen AI models execute.

Think creatively

or apply common sense.

Estimate uncertainty

or explain decision rationale.

Translate learning

across domains using generalized knowledge.

Explain cause and effect

or why something happened.

Comprehend new data

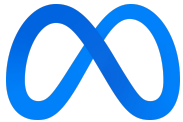
Gen AI models can be fooled by new data.

Gen AI Impact: Silicon Valley's Take



“To close, across the company, we are excited about **helping people, businesses and society reach their full potential with AI.**”

➤ Sundar Pichai, Alphabet CEO



“These [AI]investments will help us develop and deploy privacy-enhancing technologies and build new innovative tools that make it easier for businesses to not only find the right audience for their ad but also **optimize and eventually develop their ad creative.**”

➤ Susan Li, Meta CFO



“And we are going further with Dynamics 365 Copilot, which works across CRM and ERP systems to bring the next generation of AI to employees in every job function, **reducing burdensome tasks like manual data entry, content generation and note taking.**”

➤ Satya Nadella, Microsoft CEO

Gen AI Impact: Hollywood's Take

Los Angeles Times

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TECHNOLOGY AND THE INTERNET

Column: Your boss wants AI to replace you. The writers' strike shows how to fight back

“Too many executives in too many industries, such as entertainment, tech and journalism, **recognize generative AI for what it is: an opportunity to wield leverage over already precarious workforces.** There’s going to be a long, hard struggle, but it’s one worth fighting. The result will determine what kind of work we all get to do; who technology ultimately serves, us or the 1%; and **whether we all profit from the rise of AI — or just those who own the algorithms.**”



Generative AI Impact: Media's Take

☰ 🔍 GOT A TIP?

THE
Hollywood
REPORTER

NEWSLETTERS

NEWS FILM TV AWARDS LIFESTYLE BUSINESS CANNES VIDEO MUSIC WRITERS STRIKE

HOME > BUSINESS > BUSINESS NEWS

Barry Diller Thinks Publishers Should Sue Over Generative AI

“When the internet first began, everything was free... The amount of destruction that took place at the beginning when it was declared a free media was enormous.”

“You can do it two ways: The industry can get together and say, ‘We’ve got enough people on our side to stop it.’ The other side is more difficult to do, but **companies can absolutely sue under copyright law**, copyright infringement will give you \$150,000 per slug if you can do it. The point is that publishers get immediately active and absolutely institute litigation, but also have a mass position of saying, **‘We are not going to let what happened out of free internet happen to post-AI internet if we can help it.’**”



Generative AI: Grilled in Washington



“What you’re doing has **enormous potential** and **enormous danger**.”

- ★ President Biden at White House meeting with AI executives, May 4



“It’s one of my areas of greatest concern - the more general capability of these models to manipulate, to persuade, to provide sort of **one-on-one disinformation**.”

- ★ Sam Altman, OpenAI CEO & Co-Founder, at Senate hearing, May 16

Generative AI: Expect Regulation

Senate Committee	Hearing Title	
Judiciary	AI and IP: Interop. of AI & Copyright Law	May 17
Judiciary	Oversight of AI: Rules for Artificial Intelligence	May 16
Homeland Security	AI in Government	May 16
Armed Services	AI and ML applications to enable cybersecurity	April 19
Homeland Security	AI: Risks and Opportunities	March 8
White House Meeting	Corporate CEOs	
VP Harris, President Biden	Alphabet, Microsoft, OpenAI, Anthropic	May 4
Congressional Legislation	Summary	
Real Politics Ads Act -Klobuchar, Booker, Bennet	Would require a disclaimer on political ads that use AI-generated images or videos	May 15
AI Leadership Training Act -Peters, Braun	Would provide guidance to federal leaders when making decisions regarding AI technology	May 15

“Our goal is to demystify and hold accountable those new [AI] technologies to avoid some of the mistakes of the past.”

- Senator Blumenthal (D-CT), May 16, 2023

On the same day,

Apple restricted employee use of ChatGPT

&

NYC's Public Schools Chancellor lifted its ChatGPT ban

Generative AI: Cross-Currents

◆ WSJ NEWS EXCLUSIVE | TECH

Apple Restricts Employee Use of ChatGPT, Joining Other Companies Wary of Leaks

The iPhone maker is concerned workers could release confidential data as it develops its own similar technology

FIRST PERSON

ChatGPT caught NYC schools off guard. Now, we're determined to embrace its potential.

After a cautious start, our approach to AI technology is evolving.

By David C. Banks | May 18, 2023, 6:00am EDT

Closing Observations

- Generative AI is a **revolutionary** technology
 - A steam engine for the mind
- Generative AI is a **disruptive** technology
 - Already impacting demand for services like online tutoring
 - Already presenting a threat to jobs in industries like entertainment
- Generative AI is best for **valuable & repeatable** processes
 - At this stage, capabilities do not extend to strategic, lateral thinking
- Generative AI will be impacted by **regulation**
 - Politicians on both sides of the aisle favor government intervention

Thank You

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