Generative AI
REPORT

Emerging Trends in Adoption and Strategy

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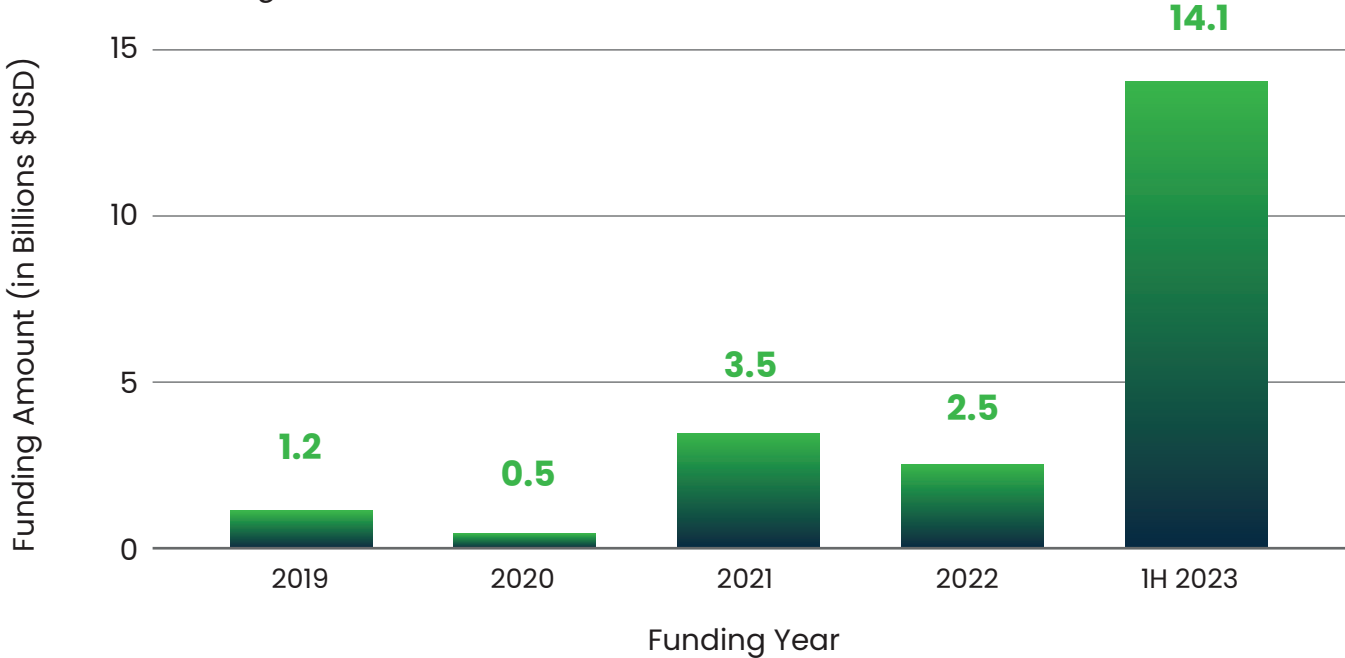**GROUP**
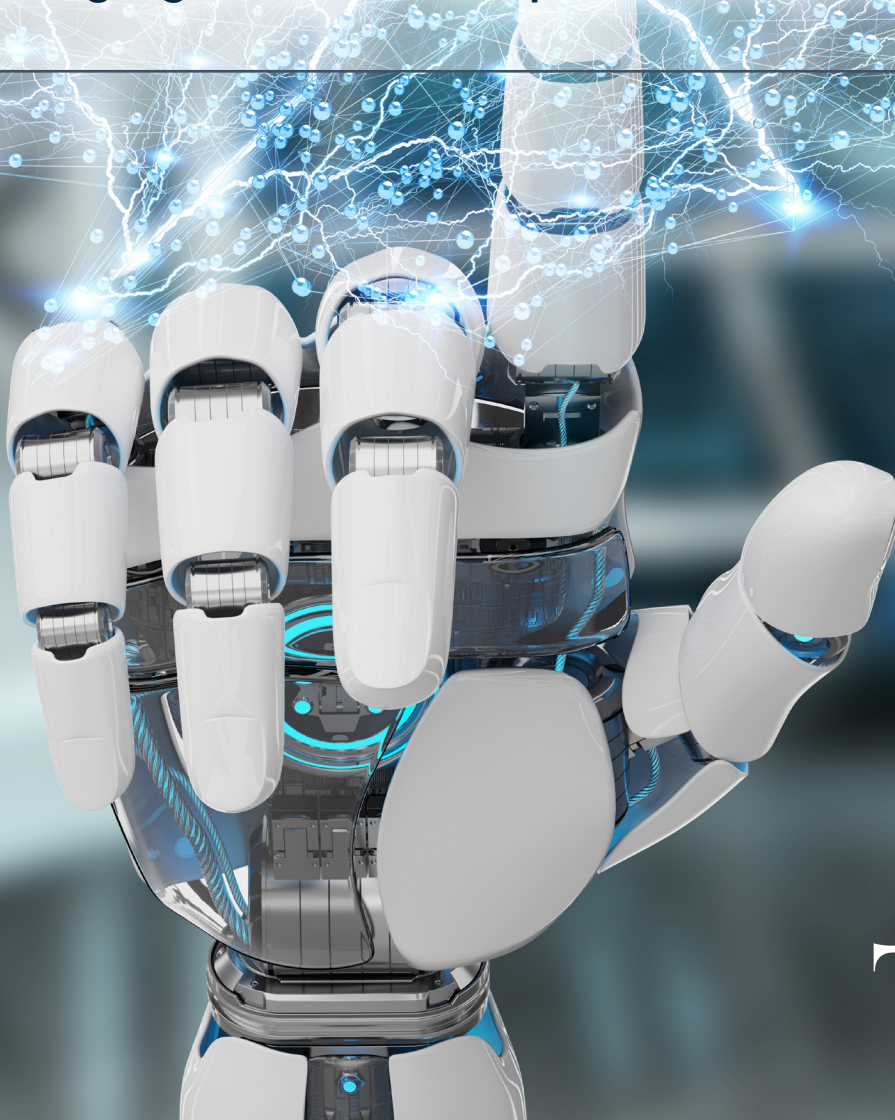
Generative artificial intelligence (AI) describes a broad range of technologies that employ curated training data and machine learning algorithms to create images, text, video, and other forms of media.

Despite an extended downturn in private market dealmaking and IPO activity in 2023, funding for generative AI startups has soared.

Equity Funding for Generative AI Startups

Data from CB Insights

Funding Amount (in Billions $USD)

- 2019: 1.2
- 2020: 0.5
- 2021: 3.5
- 2022: 2.5
- 1H 2023: 14.1

Funding Year

Largest Equity Rounds

Of the $14.1 billion raised by generative AI startups in the first half of 2023, five household names received the lion's share of funding:

1. **OpenAI:** $10 billion corporate minority round
2. **Inflection:** $1.3 billion Series B
3. **Anthropic:** $850 million Series C and corporate minority round
4. **Adept:** $350 million Series B
5. **Cohere:** $270 million Series C

The Landscape of Generative AI Models

Most generative AI technologies on the market today are constrained to a single mode of output. Large language models like OpenAI's GPT-3.5, for instance, can only deliver text as output, while text-to-image models like CompVis and Stability AI's Stable Diffusion are constrained to image outputs.

Nonetheless, unimodal models have found extensive applications in content marketing, law, design, programming, biology, music generation, and other forms of knowledge work. Below are some popular modalities and leading models within each category.

Language Models

ChatGPT

The free version, which runs on GPT-3.5, counts over 100 million users and can generate text and code.

Bard

Powered by Google's Pathways Language Model 2 (PaLM 2), Bard functions as an "experimental conversational AI service".

Bing AI

Leverages Microsoft's Prometheus to infuse GPT-4 outputs with Bing search results for real-time answers.

Text-to-Image Models

Stable Diffusion

Uses a diffusion model to turn text inputs into new images that are loosely based on variations of its training data.

DALLE 2

Pairs a text encoder with a diffusion decoder to create sketches, art, and photorealistic imagery from a natural language prompt.
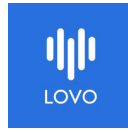
Adobe Firefly

Built into Adobe Creative Cloud, the model can create word art, recolor vectors, edit existing images, and generate new ones.

Text-to-Audio **Models**

Speechify

Reads text from books, PDFs, and blog posts aloud using a variety of customizable voices.

Lovo AI

Creates realistic, humanlike voice-overs in multiple languages from a natural language script.

Murf

Create voiceovers and modify audio using voice cloning and voice-changing features.

Text-to-Video **Models**

Descript

Manipulate a text-based transcript to shorten and lengthen video outputs.

Fliki

Upload a blog post and turn it into a video, podcast, or voiceover.

Peech

Automatically creates transitions and generates short-form snippets from long-form video inputs.

Specialized **Models**

FrameDiff

Invented by MIT CSAIL researchers to generate novel, synthetic protein structures that don't exist in nature.

ProteinSGM

Uses a score-based generative diffusion model to identify new therapeutic proteins.

MOSTLY AI

Enlarges and enhances existing datasets by using AI to manufacture synthetic data.

Where is the Money Going?

More than two out of every three dollars raised by generative AI startups in the twelve months went to startups developing generative interfaces. These include AI assistants, human-machine interfaces (HMI), generative search engines, and AI-powered productivity and knowledge management tools.

The remaining one-third of funding dollars are claimed by startups working on technologies tailored for individual modalities like text, visual media, code, and audio.

Distribution of Equity Funding, Q3 2022 to Q2 2023

Data from CB Insights

Generative Interfaces
67.0%

Text
15.9%

Visual Media
9.7%

Code
4.4%

Speech and Audio
3.0%
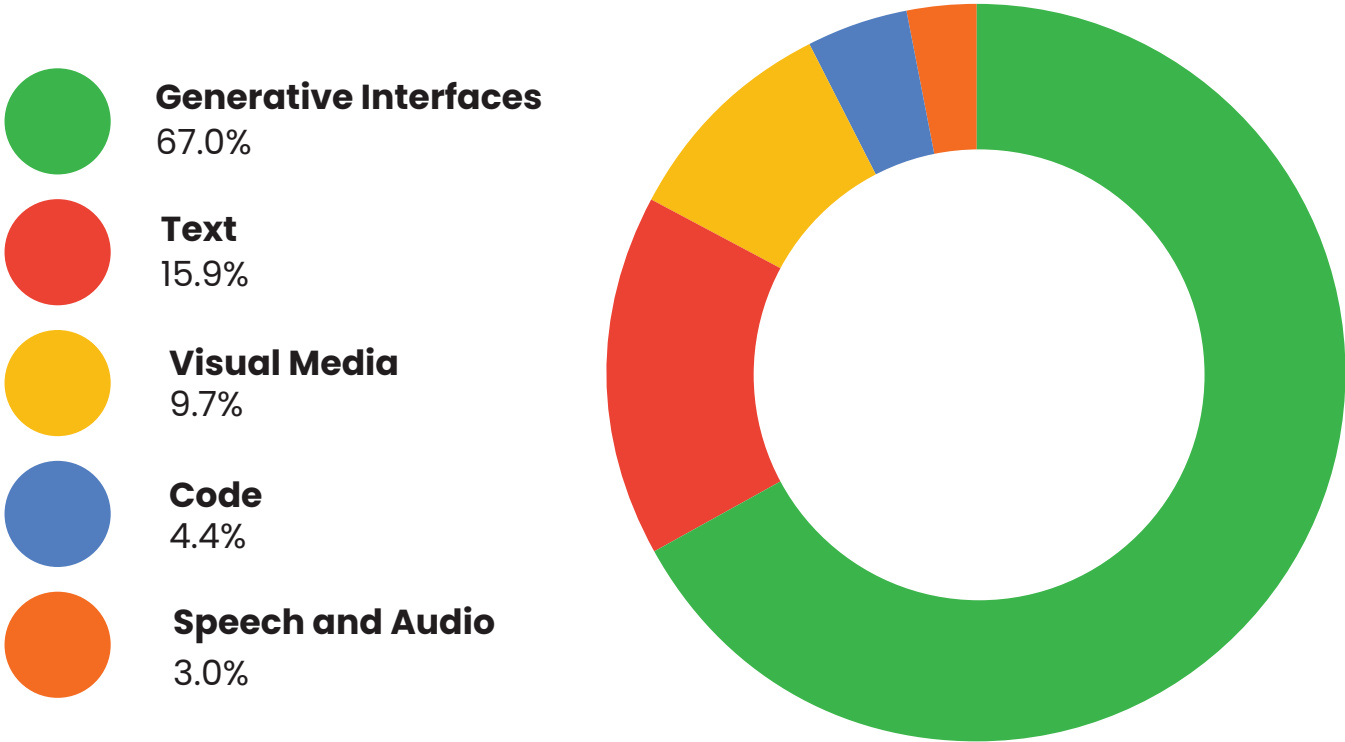
Multimodal AI: The Next Frontier

The next iteration in generative AI technologies will allow models to accept different types of media as both inputs and outputs. These multimodal systems will have more generalist capabilities than their single-mode counterparts and will be equipped to generate solutions that lie at the intersection of multiple forms of media.

However, because different data types come with different statistical properties, unifying them under a single hood to create models with multimodal capabilities has proven to be a challenging task.

Models With Multimodal Capabilities

GPT-4 — The successor model to GPT-3 and GPT-3.5, OpenAI's GPT-4 was released on March 14th, 2023. Available to users of the $20-a-month ChatGPT Plus plan, the multimodal large language model (LLM) can accept text and image inputs and emit text-only outputs.

ImageBind — Facebook parent company Meta's new holistic AI model can process information from six modalities, including text, visual imagery, and audio—as well as data from sensors that record three-dimensional depth, thermal energy, and motion/positioning.

PaLM-E — An "embodied" version of Google's Pathways Language Model (PaLM), PaLM-E is a 562 billion parameter model that enables robotics systems to field text and visual inputs. Robots running PaLM-E can independently navigate complex spaces, manipulate tabletop objects, plan tasks and motions, and answer visual questions.

Generative AI's Growth Potential

Although 2023 is generative AI's breakout year, continued public and private funding is leading to rapid and sustained improvements over the current state-of-the-art. These tailwinds position the generative AI market for exceptional growth over the upcoming decade.

$1.3 Trillion	Size of the industry in 2032, as estimated by Bloomberg Intelligence (BI)
41.6% CAGR	Compound annual growth rate of the industry over the next decade
$280 Billion	In additional revenue created in adjacent industries like chipmaking and data storage due to knock-on effects of increased demand for generative AI solutions
12%	Of total technology spending by 2032, up from 2% in 2022

Revenue From Generative AI

Data from Bloomberg Intelligence (BI)
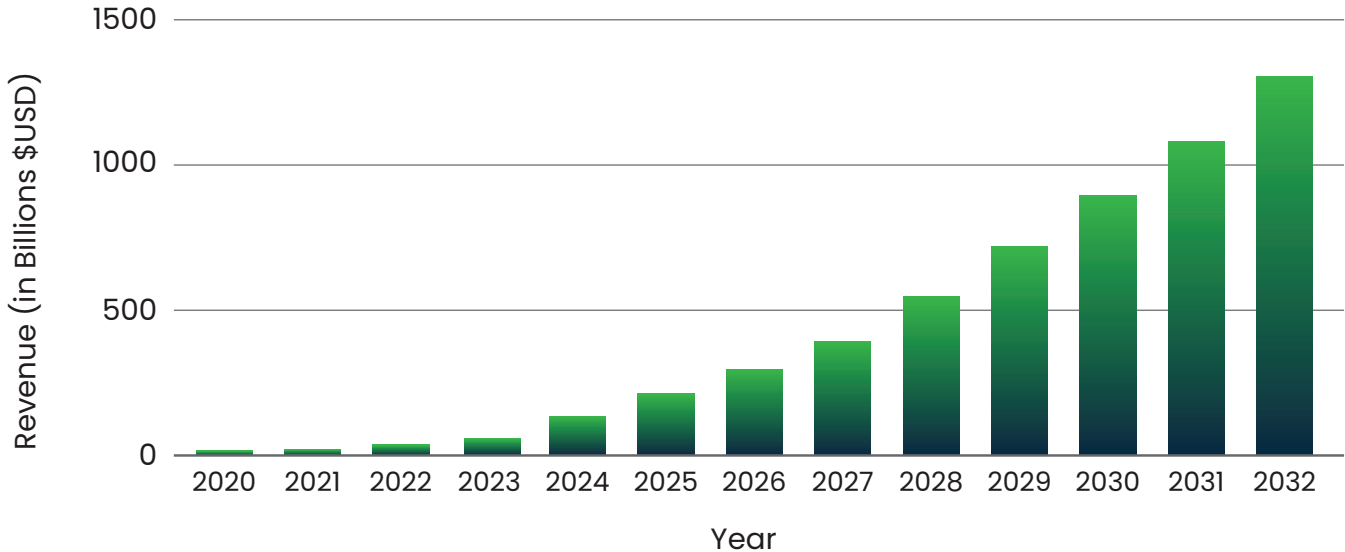
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