



# What the rise of generative AI means for investors

**“Generative AI is at a transition point, and we are crossing a chasm. This is the first time where the broader population sees the magic happening. I am extremely bullish on this concept.... When everybody said AI is out (of favour), it is all about blockchain and crypto, [it] turned out that AI accelerated, and the others had a meltdown instead. I think that we’re going to see very exciting things coming up in the next few years.<sup>1</sup>”**

**Danny Lange, Senior Vice President of AI at Unity**

**THE NEWS: Microsoft is planning to make a multibillion-dollar investment in OpenAI, the startup behind ChatGPT, at an approximate USD 29 billion valuation.**

Although Microsoft’s additional investment in OpenAI was the latest artificial intelligence (AI) related headline, other generative AI applications have been capturing people’s attention. What is different now are the many immediate applications of the technology and the broad implications for investors.

## What is generative AI?

Generative AI is an umbrella term for a form of machine learning (ML) called “deep learning”. This form of AI uses machines trained on sets of data to perform certain tasks and/or make predictions without human direction – and recently, they made a big technological leap in how they learn. Most initial ML models involved supervised learning, in which humans were needed to classify data – for example, identifying an image as a “dog” or a social media post as “political.” Recent developments in generative AI involved unsupervised learning, in which the model makes its own predictions and calculations based on the massive amounts of data fed into it.

And now, the machine has moved from being able to identify the dog in an image to creating an image of the dog. A technology called DALL-E creates paintings based on descriptive words, and Chat Generative Pre-trained Transformer (ChatGPT) can write economic commentary or even computer code based on a few prompts. To be sure, although the ChatGPT and DALL-E functionality

## Key takeaways

- ChatGPT and DALL-E 2 have brought generative AI to the forefront
- Underlying GPT technology is growing rapidly and has practical use cases across sectors and industries
- We expect this to be a disruptive innovation, but over time

and user interfaces are remarkable, the underlying technology is already several years old but improving rapidly. Private and open source advanced GPT models have been created by Meta Platforms, Microsoft, Google and more since 2018.

## Why it matters for investors

ChatGPT is an example of a large language model (LLM) – essentially, software trained on immense sets of text data to execute specific tasks, such as finishing a sentence or completing a line of code. LLMs have billions of variables (parameters) that they can change as they learn – and as a result, as their accuracy rate increases, so do the business use cases. For example, an AI-driven chatbot might be able to answer 90% of questions from banking customers, freeing up employees to spend more time selling services or provide a better in-person experience to the bank’s highest-value clients.

Imagine all the scenarios for this type of technology. A company requiring any written materials – ranging from



simple product descriptions to technical manuals to answers to “Why did my insurance rate go up?” – will be able to do it faster and cheaper than any human being can. On the coding side, generative AI technologies will free up programmers to engage in more-important and higher-value-added programming tasks rather than basic, boilerplate coding, which is extremely time-consuming.

Generative AI can be used to generate other outputs beyond text, including images, voice and movies. This tool could aid or even replace time-intensive human tasks, such as designing logos, illustrating scenes and designing products. These models will be integral to the next generation of augmented and visual reality-related technology in gaming; visual interactive entertainment; and business simulations, such as “digital twins”. We could even soon witness a famous actress licence her image to a production company, which then uses a generative AI model to do the actual acting in an advertisement.

### Ethical and regulatory questions

ChatGPT and all AI-related technologies raise important ethical questions and issues, such as copyright and licensing issues for AI-created images. ChatGPT can also produce incorrect, inconsistent or even inappropriate answers – a result of using the entire Internet as its training set. For companies using the technology on specific use cases, this will be less of an issue, and they can further train the machine with more-specific data sets and fine-tuning. But for social media companies in particular, these are serious issues.

As we have seen numerous times with the advent of a new technology, the applications and uses are introduced first, and then regulation has to catch up. OpenAI is hoping that by initially opening ChatGPT for broad public use, it can better help train the model with real-time feedback from users. More than 1 million users signed up to use OpenAI’s ChatGPT tool in the first five days after release in November 2022<sup>2</sup>.

### How AllianzGI is positioned

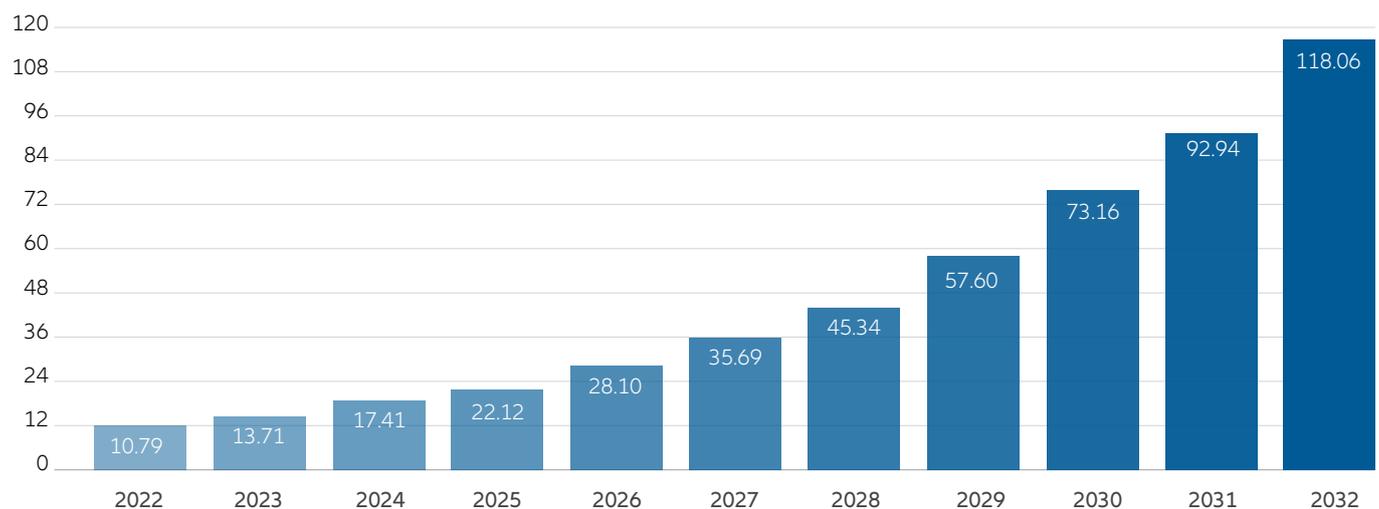
While iterations of generative AI technology have existed for decades, applications such as ChatGPT and DALL-E are milestones, especially in the area of unsupervised ML and deep learning applications. Within the theme of this type of AI-driven transformation, the Allianz Global Artificial Intelligence strategy seeks broad and diversified exposure to generative AI across AI infrastructure, AI applications and AI-enabled industries.

### Conclusion

The future of generative AI will likely evolve rapidly. We expect to see improvements in the quality and diversity of generated content; new types of generative models; and broader application in a variety of industries, such as healthcare, finance and transportation. Additionally, AI should become more accessible to a wider range of users through user-friendly interfaces and tools. 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.

### Chart of the day: generative AI market could grow 27% annually over 10 years

Generative AI market size (2023 to 2032; USD billions)



Source: Precedence Research, December 2022. Compound annual growth rate = 27.02% from 2023-2032.

1. [Unity's AI Chief on Generative AI, Metaverse and Gaming, aibusiness.com, December 20, 2022.](#)
2. "What is Generative AI", McKinsey and Company, 19 January 2023.

## Disclaimer

**Investing involves risk.** The value of an investment and the income from it will fluctuate and investors may not get back the principal invested. Past performance is not indicative of future performance. This is a marketing communication. It is for informational purposes only. This document does not constitute investment advice or a recommendation to buy, sell or hold any security and shall not be deemed an offer to sell or a solicitation of an offer to buy any security.

The views and opinions expressed herein, which are subject to change without notice, are those of the issuer or its affiliated companies at the time of publication. Certain data used are derived from various sources believed to be reliable, but the accuracy or completeness of the data is not guaranteed and no liability is assumed for any direct or consequential losses arising from their use. The duplication, publication, extraction or transmission of the contents, irrespective of the form, is not permitted. This material has not been reviewed by any regulatory authorities. In mainland China, it is for Qualified Domestic Institutional Investors scheme pursuant to applicable rules and regulations and is for information purpose only. This document does not constitute a public offer by virtue of Act Number 26.831 of the Argentine Republic and General Resolution No. 622/2013 of the NSC. This communication's sole purpose is to inform and does not under any circumstance constitute promotion or publicity of Allianz Global Investors products and/or services in Colombia or to Colombian residents pursuant to part 4 of Decree 2555 of 2010. This communication does not in any way aim to directly or indirectly initiate the purchase of a product or the provision of a service offered by Allianz Global Investors. Via reception of his document, each resident in Colombia acknowledges and accepts to have contacted Allianz Global Investors via their own initiative and that the communication under no circumstances does not arise from any promotional or marketing activities carried out by Allianz Global Investors. Colombian residents accept that accessing any type of social network page of Allianz Global Investors is done under their own responsibility and initiative and are aware that they may access specific information on the products and services of Allianz Global Investors. This communication is strictly private and confidential and may not be reproduced. This communication does not constitute a public offer of securities in Colombia pursuant to the public offer regulation set forth in Decree 2555 of 2010. This communication and the information provided herein should not be considered a solicitation or an offer by Allianz Global Investors or its affiliates to provide any financial products in Brazil, Panama, Peru, and Uruguay. In Australia, this material is presented by Allianz Global Investors Asia Pacific Limited ("AllianzGI AP") and is intended for the use of investment consultants and other institutional /professional investors only, and is not directed to the public or individual retail investors. AllianzGI AP is not licensed to provide financial services to retail clients in Australia. AllianzGI AP is exempt from the requirement to hold an Australian Foreign Financial Service License under the Corporations Act 2001 (Cth) pursuant to ASIC Class Order (CO 03/1103) with respect to the provision of financial services to wholesale clients only. AllianzGI AP is licensed and regulated by Hong Kong Securities and Futures Commission under Hong Kong laws, which differ from Australian laws.

This document is being distributed by the following Allianz Global Investors companies: Allianz Global Investors GmbH, an investment company in Germany, authorized by the German Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin); Allianz Global Investors (Schweiz) AG; in HK, by Allianz Global Investors Asia Pacific Ltd., licensed by the Hong Kong Securities and Futures Commission; in Singapore, by Allianz Global Investors Singapore Ltd., regulated by the Monetary Authority of Singapore [Company Registration No. 199907169Z]; in Japan, by Allianz Global Investors Japan Co., Ltd., registered in Japan as a Financial Instruments Business Operator [Registered No. The Director of Kanto Local Finance Bureau (Financial Instruments Business Operator), No. 424], Member of Japan Investment Advisers Association, the Investment Trust Association, Japan and Type II Financial Instruments Firms Association; in Taiwan, by Allianz Global Investors Taiwan Ltd., licensed by Financial Supervisory Commission in Taiwan; and in Indonesia, by PT. Allianz Global Investors Asset Management Indonesia licensed by Indonesia Financial Services Authority (OJK).