Santander Private Banking

The potential of generative Artificial Intelligence (AI)

27%

Projected annual growth of the generative AI market in the 10 years to 2032[1]

USD 15.7 trillion

Contribution of AI to global GDP in 2030[2], which is more than the combined GDP of China and India in 2022.

45%

Of global revenues in 2030 will come from productivity gains and spending stimulated by the use of AI[3]

1 Source: Precedence Research, Dec. 2022. Compound annual growth rate = 27.02% from 2023 to 2032.
2 Source: PwC's Global Artificial Intelligence Study: Exploiting the AI Revolution", PricewaterhouseCoopers, in USD, by 2030. June 2017.
3 Source: PwC: https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html

We are beginning to see the potential of generative artificial intelligence (AI) beyond the "Magnificent 7" and the tech sector.

2023: The year of generative artificial intelligence (AI)

The recent emergence of **generative artificial intelligence (AI)** is a clear example of the massive, rapid adoption of a technological innovation that is having a major impact on society and all sectors of the economy[1].

ChatGPT is a generative AI tool that has catalysed this revolution by offering easy access to this disruptive technology, although there are other applications based on this technology that enable computers to generate and process not only the written word, but also voice, image and video.

Unlike previous innovation cycles, this time the **technology giants are the initial beneficiaries**. Specifically, the returns are being concentrated mostly in the "**Magnificent 7**," seven large-cap tech and media companies, largely because of their exposure to generative AI. **In 2023, artificial intelligence-related indices appreciated by an average of 34%, compared with 21.77% by the MSCI World index and 24.23% by S&P 500 index**[2].

In terms of individual companies, the most outstanding case is **Nvidia**, which dominates about 74%[3] of the market in semiconductors and GPUs (graphics processing units) that are capable of performing accelerated computing — fundamental for training artificial intelligence models. Its **market capitalisation exceeds USD2 trillion**[2] and it is viewed as one of the companies that could benefit most from the adoption of this technology5.

What is generative AI?

Generative AI is an umbrella term for a form of machine learning (ML) called "deep learning". It can create new content such as text, images, music, audio and videos.

This type of AI has recently made a huge leap forward in the way it learns. Most of the early ML models involved supervised learning, where humans were needed to classify the data. For example, identifying a social media post as "political". But the latest advances in generative AI are based on unsupervised learning, in which the model makes its own predictions and calculations based on the input data. The machine has advanced from being able to identify a car in an image to creating an image of a car.

It can be trained to learn human language, programming languages, art, chemistry, biology or any complex subject.

Why is generative AI important?

Generative AI applications can help reinvent most customer experiences and applications, create unprecedented new applications, and help customers reach new levels of productivity.

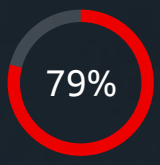
According to Goldman Sachs[6], generative AI could increase the global gross domestic product (GDP) by 7% (i.e. nearly USD 7 trillion). They also project that it could increase productivity growth by 1.5 percentage points over 10 years. This would, in turn, raise the compound annual growth rate of the the S&P 500's earnings per share (EPS) to 5.4% over the next 20 years, up from the 4.9% projected currently by their discounted dividends model. This suggests that the S&P 500 would be worth 9% more than it is today.

Some of the benefits of generative AI include improving customer interactions, optimising business processes, improving offerings, and increasing productivity.

1 Source: McKinsey, August 2023: 'The state of AI in 2023: Generative AI's breakout year.
2 Source Bloomberg. Profitability 2023. Indices used to measure average appreciation of AI: Nasdaq Artificial Intelligence Index, Solactive Artificial Intelligence Index and NYSE AI Index.
3 Source: Factset Revere Industry Classification System (RBICS), Feb. 2024.
4 Source: Bloomberg, 27 February 2023.
5 Source: Factset, 27/02/2024. Analysts expect Nvidia to achieve 31% earnings growth over a 3-5 year period.
6 Source: Goldman Sachs research: Generative IA, Apr. 2023: https://www.goldmansachs.com/intelligence/pages/generative-ai-could-raise-global-gdp-by-7-percent.html

Rapid adoption of generative AI

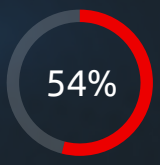
Generative AI is one of the most rapidly adopted technological innovations ever, having aroused the interest of the majority of businesspeople: people from all regions, industries and generations are using generative AI in the workplace. According to a McKinsey survey:



Of respondents say they have been exposed to generative AI (at work or otherwise).

Say the use of generative AI is already on the board's agenda.

Of respondents expect generative AI to cause significant or disruptive changes in their industry within three years.



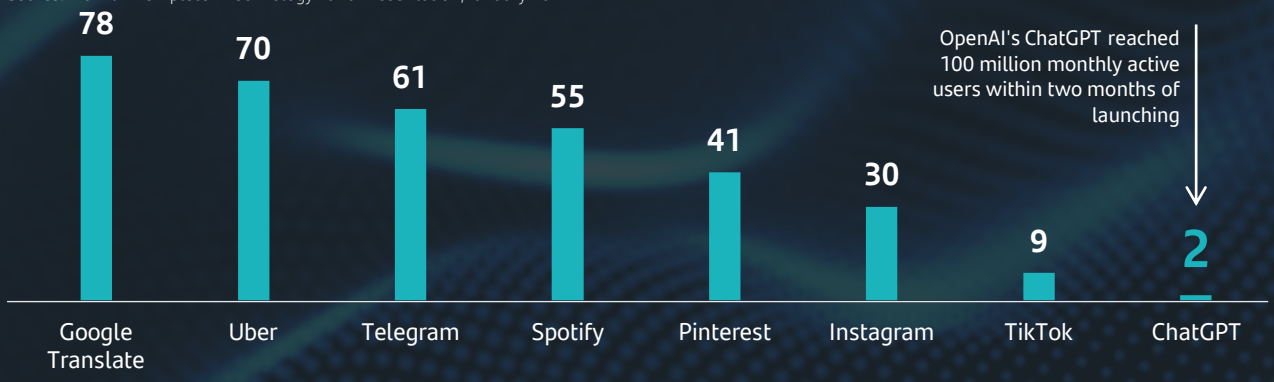
Of AI users expect higher productivity to be the greatest benefit of using AI.

Other expected benefits include

- improved efficiency (**20%**)
- task automation (**15%**)
- better quality (**8%**)
- lower costs (**3%**)

Months to reach 100mn users

Source: Franklin Templeton Technology Fund Presentation, January 2024.



Benefits of generative AI

Cost cuts

On average, 42% of respondents reported cost reductions of 10% or greater due to adopting AI. The largest cost reductions are in service operations (54%), marketing and sales (55%) and manufacturing (66%).

Improved offering

For those with the best outcomes from AI[1], the main goal of generative AI is to increase the value of offerings by integrating AI-based features or insights.

Higher profits

On average, 59% of respondents reported a more than 5% increase in profit due to AI; the largest revenue increases were in product/service development (65%), marketing and sales (61%), and service operations (57%).

Higher productivity

Generative AI is expected to increase productivity in knowledge work, such as document writing, text summarisation, product design creation, and customer service chatbots.

New revenue sources

23% of the top performers in AI[1] cite creating new business or revenue streams as the primary goal of using generative AI.

1 Companies where more than 20% of EBIT (Earnings before Interest and Taxes) comes from artificial intelligence.

Source: McKinsey, August 2023: 'The state of AI in 2023: Generative AI's breakout year'. Survey conducted in mid-April 2023. McKinsey's annual survey examines the current state of AI, focusing this year on the rise of generative AI. The report provides information on the level adoption, impacts and outlook based on a survey of 1,684 respondents around the world in sectors including technology, financial services, healthcare, consumer goods, and energy.

Projections for the future of generative AI

It's hard to predict how generative AI will play out, but it is likely to evolve rapidly and **we believe it can become a key part of AI-driven transformation and innovation**. We expect to see improvements in the quality and diversity of the content it generates, new types of generative models, and broader application in such **industries as healthcare, finance and transportation.**

According to McKinsey[1], generative AI is poised to unleash a powerful wave of productivity growth that is likely to affect every industry and **could add as much as USD 4.4 trillion to the global economy** each year across the 63 use cases that they examine.

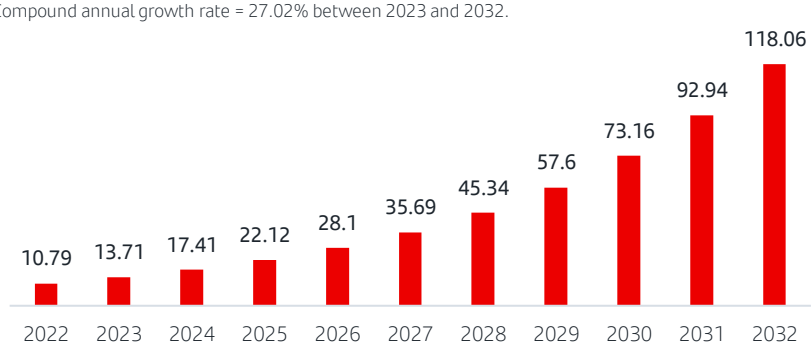
Generative AI is expected to affect all industries, although four business functions will likely account for 75% of the total annual value it can deliver: **marketing and sales, customer operations, software engineering, and research and development[1].**

According to PwC[2], the greatest economic benefits of AI will be obtained in **China (USD 7 trillion in 2030) and North America (USD 3.7 trillion)** — a total of **USD 10.7 trillion, representing almost 70% of the global economic impact.**

The generative AI market could grow by 27% per year for the next 10 years

Size of the market in generative AI (between 2023 and 2032, USD billion).

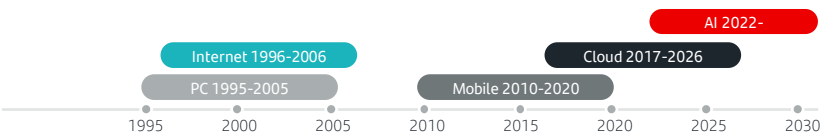
Source: Precedence Research, Dec. 2022.
Compound annual growth rate = 27.02% between 2023 and 2032.



The market is currently underestimating the impact of AI. On average, Wall Street is underestimating the opportunity for change by 38%:

Source: Data That Caught My Eye: Sizing the Impact, Morgan Stanley, Jan. 2024.

	PC	Internet	Mobile	Cloud	AI
Initial forecast	225mn PC users by 2000	225mn internet users by 2000	657M smartphone shipments by 2013	USD 90.2bn revenue of top 3 cloud providers	?
Current	354mn	361mn	1.02bn	USD 115.6bn (in 2020)	
Underestimation	36%	58%	36%	22%	
10Y CAGR	14%	41%	15%	30%	



We believe that research and stock picking are essential to harness the potential of AI across different sectors in the coming years.

1 Source: PwC: Sizing the prize: What's the real value of AI for your business and how can you capitalise?
2 Source: McKinsey, The economic potential of generative AI: The next productivity frontier.

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