

Generative AI: are we witnessing an iPhone moment?

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Christopher Gannatti, CFA

Global Head of Research

Is ChatGPT the 'iPhone moment' for artificial intelligence (AI)? The iPhone catalysed many different things all in one device:

- It is hard to remember a time 'before smartphones', but the iPhone was only introduced in 2007. Apple is one of the world's largest companies by market capitalisation, and there are many companies that make smartphones that are also quite large.
- It is hard to remember a time 'before apps', but there is now a so-called 'app-economy.' Spending in iOS and Android apps in 2022 is estimated to be almost \$130 billion¹.

Why did the iPhone so successfully change the world? It combined an aura of excitement with an incredibly flexible set of potential future capabilities and an ease of use that competitors in 2007 struggled to match. Today, the iPhone is not even really a device, but rather a key into an ecosystem where many different services can be consumed.

Will ChatGPT become something similar?

It is a bold prediction to say ChatGPT is the next iPhone. It would mean OpenAI has a chance at becoming the world's most highly valued company by market capitalisation and to stay in that position for numerous years, similar to what Apple has done. Apple created both hardware and software. It is likely that if Apple focused solely on hardware or solely on software, it wouldn't have been as successful.

Microsoft vs Alphabet

In 2023, ChatGPT is software, and it is also clear the world's largest companies see the potential value and are acting to capitalise on their slices of the economic pie. Microsoft has been the most direct, investing around \$10 billion directly into OpenAI and indicating the technologies underpinning GPT-4 will be incorporated into programs, like Office 365. If Microsoft charges a small amount more for the Office 365 subscription that includes access to GPT-4, this could equate to tens of billions in incremental annual revenue².

Alphabet, through its Google platform, is seeking to create its own version of ChatGPT, but it does not seem to be moving as quickly as OpenAI, possibly due to the 'innovator's dilemma', in that no other company has a greater than 90% market share of internet search, so it is tough to imagine Google desiring a new way of doing search³.

Microsoft CEO Satya Nadella was masterful in creating the perception of a possible 'search war' before any behaviours actually shifted away from Google search.

Both companies will deploy generative AI into their cloud services, seeking to invigorate growth in this important part of their revenue stream after 2022 posted slower growth than had been seen in prior years. This too could add tens of billions of dollars in incremental annual revenue.

AI's pie of economic value

On a recent episode of the Lunar Society podcast, posted on 27 March 2023, Ilya Sutskever, OpenAI's Chief Scientist, noted AI is going to be increasingly more valuable year after year, and that this could continue exponentially⁴.

Who will capture all the value created by AI? Being involved with both software and hardware elements, as well as the app store, Apple captured lots of different slices of an ecosystem catalysed by the introduction of the iPhone, as well as maintained its staying power as the environment continued to evolve. In the case of generative AI, the technology that underlies such systems as ChatGPT, we see a catalyst for increased demand for cloud computing. It is not coincidental OpenAI has a significant relationship with the world's second largest provider of cloud computing infrastructure with Microsoft's Azure where AI models of this size can be efficiently trained, stored, and run.

All of the cloud infrastructure players, be it Amazon Web Services, Microsoft Azure, Google Cloud, Oracle, and others, are surely seeking to create an Apple-like ecosystem that is not 'friction free' for a user to shift from iOS to Android. The more value-added services provided, the less likely customers would be enticed to switch their provider or bring more of their workload back on premise. They want cloud customers to get used to the cloud computing equivalent of air pods, the i-Watch, Apple TV, etc.

The largest tech-oriented companies in the world are also ramping up their investments⁵:

- In 2022, Alphabet, Amazon, Apple, Meta, and Microsoft spent \$223 billion on research and development (R&D), up from \$109 billion in 2019. This was in addition to \$161 billion in capital expenditures (CAPEX)—which represented a tripling in three years.
- These five companies were spending roughly 16% of their annual combined revenues on R&D and CAPEX in 2015, which had risen to 26% in 2022.
- Meta indicated AI is its biggest investment category and Alphabet is planning to reveal the size of its AI investment for the first time as part of its Q1 2023 earnings announcement.

We also see various partnerships and integrations with ChatGPT being announced, a subset of which we mention here:

- Shopify is an interesting use case, where one can 'Make [an] AI-Powered Store.' Think of customer service—ChatGPT-powered chatbots do not need to operate in terms of 'hours' so it would be possible that Shopify merchants could immediately garner 24/7 customer support⁶.

- Salesforce has referenced technology it is calling 'EinsteinGPT', which would combine its proprietary AI with that of outside partners, like OpenAI, to help businesses generate email drafts, customer-account information, and computer code⁷.
- The Coca-Cola company will leverage OpenAI's generative AI technology for marketing and customer experiences. This includes personalised ad copy, images, and messaging⁸.

Smaller companies for specialised services & acquisitions

Smaller start-up companies may utilise different large language models as a base, but then allow their users to more easily incorporate a chatbot directly onto their website to help with customer service queries.

In regulated industries, such as financial services, companies can feed past requests and questions, so large language models can 'read' and then 'learn from' the questions and the responses, thereby readying themselves for the future.

Nuance Communications, for example, was acquired by Microsoft due to its specific expertise in natural language processing related to healthcare services. Medical transcription is a huge, but specific, market.

Bottom line: be ready for diversified value creation across many different industries

When generative AI ultimately is consumed through the cloud computing platforms, the impact will not be limited to any single area of the economy. On 27 March 2023, the Wall Street Journal cited US authorities responsible for antitrust enforcement felt it important enough to mention their intention to protect the AI market from actions that might yet be taken by large incumbents, fearing threats to their dominance in the space⁹. This is yet another indication this space is a technology with far reaching implications.

1 Source: <https://www.businessofapps.com/data/app-revenues/>.

2 Source: McGee, Patrick & Madhumita Murgia. "Microsoft to add AI co-pilot to its Office software suite." Financial Times. 16 March 2023.

3 Source: "Is Google's 20-year dominance of search in peril?" Economist. 8 February 2023.

4 Source: <https://podcasts.apple.com/us/podcast/ilya-sutskever-openai-chief-scientist-building-agi/id1516093381?i=1000606122602>

5 Source: "Big tech and the pursuit of AI dominance." Economist. 26 March 2023.

6 Source: <https://community.shopify.com/c/ecommerce-marketing/chatgpt-for-shopify-store-make-ai-powered-store/td-p/1961298>

7 Source: "Salesforce to add ChatGPT to Slack as part of OpenAI partnership." Reuters. 7 March 2023.

8 Source: Johnston, Lisa. "Coca-Cola Signs As Early Partner for OpenAI's ChatGPT, DALL-E Generative AI." Consumer Goods Technology. 21 February 2023.

9 Source: Wolfe, Jan & Dave Michaels. "FTC Chair Lina Khan Vows to Protect Competition in AI Market." Wall Street Journal. 27 March 2023.

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