



DECEMBER 2024

## Decoding ChatGPT's Success: Takeaways for Europe's AI Future

The comfortable lead of American companies in General-Purpose Artificial Intelligence (GPAI) developments presents the European Union and its member states with a competitive disadvantage. Understanding the key success factors for why OpenAI's ChatGPT has emerged as the most widely used GPAI application is crucial for Europe to address undesirable market practices, bolster its economic competitiveness and strengthen national security. This Clingendael Policy Brief highlights three key drivers of OpenAI's success: (1) its mission, which was initially validated by OpenAI's non-profit nature; (2) its people, bringing together deep, diverse and unique academic expertise and practical experience, aligned with the original mission; and (3) its access to capital, which enabled OpenAI to hire best-in-class researchers and professionals and is fundamental for the massive computation power required to develop its products. Moreover, its propensity for speed and risk-taking in product development was also crucial for OpenAI's commercial success. All these elements result from, and reinforce, an unique innovation ecosystem based in the San Francisco Bay Area.<sup>1</sup> Based on these findings, the authors offer initial reflections for European policymakers and technology entrepreneurs as they seek to strengthen Europe's economic competitiveness and national security. A subsequent Policy Brief in this mini-series on Europe's AI future will delve further into these lessons.<sup>2</sup>

### Introduction

The release of ChatGPT 3.5 in November 2022 is among the most important milestones in the development of artificial intelligence (AI). Launched by OpenAI, which is based in

San Francisco, ChatGPT was the first widely accessible General-Purpose AI chatbot (see Box 1). It was the outcome of seven years of development since OpenAI's establishment in December 2015. ChatGPT brought GPAI to the general public and transformed the perception of technology experts and users alike about its potential, akin to how the advent of the internet revolutionised communications in the late 1990s.

The new chatbot attracted over one million users within five days of its launch.<sup>3</sup> Users quickly

- 1 This Policy Brief is the first of a mini-series on building European indispensability in General-Purpose AI. A second piece will focus on the European GPAI landscape and how to strengthen it. A third Policy Brief looks into how GPAI developments may influence the national security, resilience and indispensability of the Netherlands within the EU context.
- 2 The San Francisco Bay Area is a globally renowned tech hub encompassing San Francisco and Silicon Valley, home to leading technology companies and startups

- 3 *Business Insider*, 'The History of OpenAI, from the Early Days with Elon Musk to the ChatGPT Maker being Put on Blast by Scarlett Johansson', 22 May 2024.

**Box 1. Clarifying evolving concepts: General-Purpose AI versus narrow AI**

**General Purpose AI (GPAI)** refers to AI systems capable of performing a wide range of intellectual tasks similar to those that humans can undertake. The ultimate stage of AI development is to achieve **Artificial General Intelligence (AGI)**, which would theoretically be capable of performing **any** intellectual task a human can do.

**GPAI** differs from **narrow AI** – also known as ‘weak AI’. Narrow AI applications aim to solve well-defined problems and perform specific tasks, such as identifying objects in an image. Until the release of ChatGPT 3.5, the public was most familiar with narrow AI applications.

The European Union Artificial Intelligence Act (EU AI Act), in place since 1 August 2024, defines **Generative AI (GenAI)** as a subset of AI foundational models (see Figure 1). In the EU AI Act, applications such as ChatGPT are labelled as GPAI, and this Policy Brief will use the same terminology.

tested the tool, thereby showcasing its diverse capabilities, from essay writing, travel planning and code generation, to step-by-step guides on how to create a business. Shortfalls were also quickly identified, including false academic sources or book names, incorrect answers to simple mathematics problems, or how its safety protocols could initially be bypassed relatively easily through clever prompting.<sup>4</sup>

ChatGPT is the final product of a complex GPAI supply chain that involves all layers of the so-called technology stack, from hard infrastructure (including chips and data centres) to the application layer (software and applications). This GPAI supply chain serves not only large language model (LLM) applications such as ChatGPT, but also image generators like DALL-E, and video generators like Synthesia, which have been launched in parallel as groundbreaking products in the broader GPAI revolution.

As globalisation is redesigned, Europe is looking for new ways to face ongoing geopolitical power shifts and the intensifying US–China rivalry, which is mainly expressed in the technology conflict. Economic security has become a core element of the EU bloc’s thinking, and the 2023

European Economic Security Strategy presents a roadmap to reduce dependencies and achieve greater self-reliance.<sup>5</sup> The so-called Draghi report of September 2024 estimates that the EU needs an additional 800 billion EUR per year to enhance its competitiveness in relation to the United States and China.<sup>6</sup> Europe also aims to avoid the past mistakes that led to its current dependencies, such as on cloud computing.<sup>7</sup>

AI’s disruptive potential is much greater – as well as more difficult to predict – than past technologies. This makes it all the more important to identify quickly the underlying factors that have caused Europe to lag behind the current AI wave. Those who wonder whether it is too late to act on GPAI are correct in noting that the sheer scale of the required investments pose huge challenges, but the risks of giving up on becoming a relevant player in AI are simply too big, so the existing gap needs to be addressed quickly.

Set against this context, the central question that this Policy Brief aims to address is the following: what were the key success factors for ChatGPT to emerge as such a well-recognised application? Building on this, the final section of this Policy Brief will offer initial reflections on the key take-

4 We Understand AI, ‘[Fake It Til You Make It: How ChatGPT Is Fabricating Resources](#)’, 20 February 2024; Descript, ‘[Why ChatGPT struggles with math—and why that matters](#)’, 15 July 2024; and Lesswrong, ‘[Testing Ways to Bypass ChatGPT’s Safety Features](#)’, 5 December 2022.

5 European Commission, *An EU Approach to Enhance Economic Security*, 20 June 2023.

6 European Commission, *The Future of European Competitiveness: Part A*, September 2024, p. 59.

7 Alexandre Gomes and Maaïke Okano-Heijmans, *Too Late to Act? Europe’s Quest for Cloud Sovereignty*, 1 March 2024.

aways the EU can learn from OpenAI’s journey as it seeks to build European strength in GPAI – a question that will be further elaborated in a follow-up to this Policy Brief.

Following a short summary of what is at stake for Europe, this Policy Brief analyses the key elements that contributed to the commercial success of OpenAI’s ChatGPT. This includes a discussion of the company’s mission (including its shifts over time), its key co-founders and stakeholders, and its financing model, as well as its speed and propensity for risk-taking in its product development. Finally, a concluding section offers initial reflections on key take-aways for Europe.

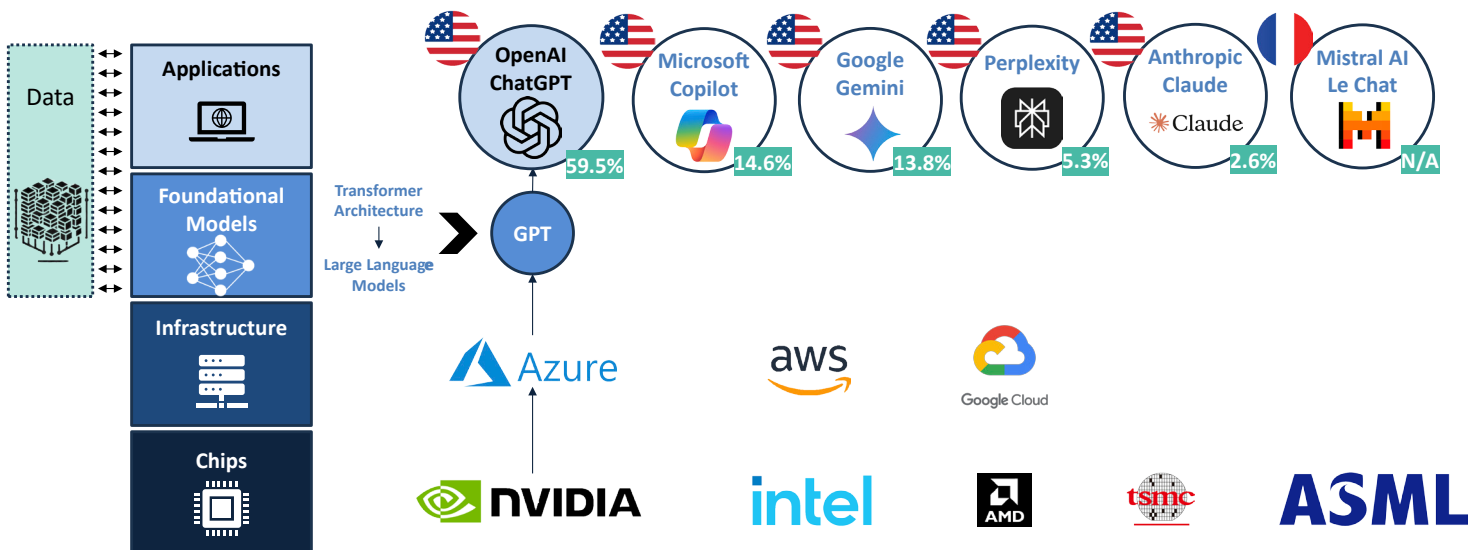
### Risks for Europe in lagging behind

As of October 2024, several alternatives to ChatGPT are available on the European market, including Microsoft’s Copilot, Google’s Gemini and Anthropic’s Claude. Other players, such as xAI with Grok and Meta with Llama, are expected to weigh in soon. The most promising European start-up in this space is France’s Mistral AI.

As visualised in Figure 1 below, American firms maintain a strong influence across all four layers of the GPAI supply chain, leaving European counterparts struggling to achieve comparable scale and impact. GPAI development is heavily reliant on highly specialised chips and vast computing power, areas where American hyper-scalers like Google, Amazon and Microsoft have established strong leadership. These companies dominate all parts of the GPAI supply chain, from chip and system design to building the cloud infrastructure, platforms and software necessary to run modern-day applications.

Notable players have emerged as key contributors in specific areas, such as American corporation Nvidia in chip design. The Dutch lithography equipment company ASML and the Taiwanese chip manufacturer TSMC are central AI players too. Their technologies and processes are key enablers of chip manufacturing with the capabilities and at the scale required for the current AI revolution. The applications layer, where ChatGPT leads, is again dominated by American companies. Notably, Microsoft is involved with no less than three GPAI applications: besides

Figure 1. General-Purpose AI supply chain: dominated by American companies



Source: authors’ compilation.

Inspired by France Digitale, ‘From Chips to Apps, Can Europe Compete in Generative AI?’, April 2024.

Note (1): The green labels present estimated market shares as of August 2024, based on First Page Sage, ‘Top Generative AI Chatbots by Market Share’, 2 October 2024.

Note (2): The companies shown in this Figure are not exhaustive, and not all companies presented in a specific layer perform the same function.

Microsoft Copilot – which runs on OpenAI’s systems –, it is a key funder of OpenAI and has also invested in France’s Mistral AI.

The strong lead of American companies in AI development and applications presents risks to the EU and its member states. The three main challenges are (1) undesirable market practices; (2) loss of European economic competitiveness; and (3) growing concerns about national security.

First, there is a risk that European citizens, governments and businesses become subject to monopolistic practices in the supply chain of GPAI. Following e-commerce platforms, social media applications and cloud services, GPAI is now becoming another area where the European digital market is distorted by the dominance of a small number of (mostly) American companies. From 2019 until 2024, Ursula von der Leyen’s first EU Presidency was in regulatory overdrive to improve the EU’s position in the digital domain. The twin Digital Markets Act and Digital Services Act aim to protect European business and citizens, respectively, from monopolistic and hazardous practices. The AI Act sets a rights- and risk-based approach that defines which applications, and under what circumstances, can use AI and be commercialised in the EU.

But regulation alone is not the solution to Europe’s challenges. Another goal should be to ensure that European companies uphold economic competitiveness in the emerging GPAI industry. This will help them maintain their innovative edge and secure a significant share of this growing sector, thereby narrowing Europe’s ‘digital deficit’.<sup>8</sup> According to Mario Draghi’s report on European competitiveness, ‘only four of the world’s top 50 tech companies are European’.<sup>9</sup> Some ascribe this situation mainly to excessive regulation by the EU.

The mantra ‘regulation stifles innovation’ is used to epitomise EU’s inability to create world tech champions. A recent report by Techleap on challenges faced by AI founders shows otherwise, however: regulation ranks only 6<sup>th</sup> in the list, coming after funding, industry awareness, market access, talent and access to data.<sup>10</sup> The EU would benefit from better and simplified communication to showcase the virtue of its regulatory approach, both within and to the outside world. In any case, lagging in the race of such a disruptive technology will prove very harmful for the EU’s economic security.

Third, excessive over-dependence on AI technology developed and controlled by non-European companies comprises several national security related risks. These include data sovereignty issues and cybersecurity threats that make use of GPAI, for example for making deepfakes or writing malware.<sup>11</sup> This puts European democracies at stake.

This is not to say that current and future AI developments should be perceived as a ‘zero-sum game’. For example, on the one hand, Europe continues to be at risk of losing its most talented experts – including academics and engineers – to American companies that operate on edge technologies. On the other hand, as the story of Mistral AI shows, Europe also reaps benefits from the knowledge those professionals gather when working for those companies.<sup>12</sup> Moreover, European companies and citizens can still benefit from these technologies, as most of them are available in Europe.<sup>13</sup>

---

8 The term ‘digital deficit’ was coined in Japan and measures the annual balance of payments deficit in digital services; see Asia Sentinel, ‘Japan’s “Digital Deficit” a National Security Issue’, 29 August 2024.

9 European Commission, *The Future of European Competitiveness*, September 2024, p. 1.

---

10 Techleap, [AI Scaling Challenges for Dutch Founders Report](#), 17 October 2024.

11 AIVD and RDI, *Generatieve AI: een transformatieve impact op Cybersecurity* (in Dutch) [Generative AI: A Transformative Impact on Cybersecurity], September 2024.

12 Institut Polytechnique de Paris, *Mistral AI, the French AI nugget co-founded by two X alumni, raised €500 mlns in 2023*, 10 December 2023.

13 The Guardian, *Meta pulls plug on release of advanced AI model in EU*, 18 July 2024.

## ChatGPT’s big bang

Artificial intelligence has been researched for decades, but progressed significantly only in the last fifteen years. However, only a few companies were able to take advantage of the technical breakthroughs and unprecedented availability of computational power and data that enabled the advent of AI. One in particular took the bold step to make access to its AI models publicly available: OpenAI.

The following sections detail the key factors behind ChatGPT’s commercial success, securing it a market share of about 60 per cent by August 2024.<sup>14</sup> Crucial elements were: (1) its mission; (2) its people; and (3) its access to capital. In addition, its propensity for speed and risk-taking emerge as two other important factors behind OpenAI’s success.

Figure 2. OpenAI’s key success factors



Source: Authors’ compilation.

## Mission, people and initial investment

OpenAI was founded in December 2015 as an open-source, non-profit organisation with the ultimate goal of ‘build[ing] artificial general intelligence (AGI) that is safe and benefits all of humanity’.<sup>15</sup> As founding President and Chairman Greg Brockman put it in 2016, ‘OpenAI [was set up as] a research outfit’.<sup>16</sup> The company’s founding documents refer to concerns about ‘how much [AI] could damage society if [it is] built or used incorrectly’.<sup>17</sup> Several OpenAI founders regarded Google as a threat, as the technology giant was developing AI without proper external checks and balances.<sup>18</sup>

OpenAI’s mission and its non-profit nature convinced many of the company’s co-founders to join the project. OpenAI was co-founded by a diverse group of eight engineers and three investors with a position within the company, supported by three external investors. Notably, three of the eight engineers were European. The main investors had a strong track record in innovation, having founded or worked for reputable companies (see Figure 3). Several engineers joined from academia, where they pursued PhDs in AI-related themes. Over the years, it was the gradual retreat from this mission that led to the departure of several co-founders, including Ilya Sutskever and Durk Kingma.

14 First Page Sage, ‘[Top Generative AI Chatbots by Market Share](#)’, 2 October 2024.

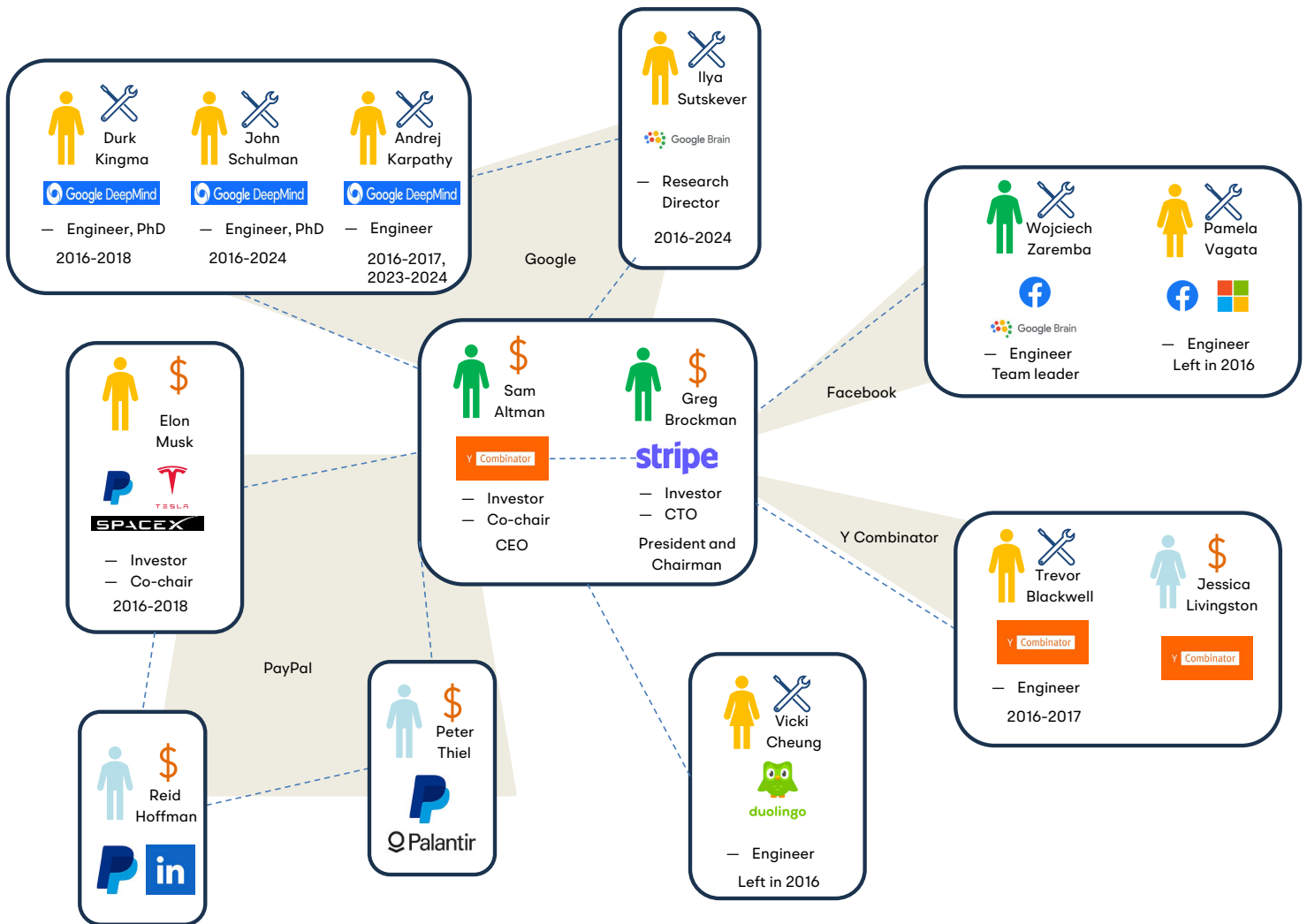
15 OpenAI, ‘[Our Structure](#)’.

16 Wired, ‘[Inside OpenAI, Elon Musk’s Wild Plan to Set Artificial Intelligence Free](#)’, 27 April 2016.

17 OpenAI, ‘[Introducing OpenAI](#)’, 11 December 2015.

18 *The New Yorker*, ‘[Sam Altman’s Manifest Destiny](#)’, 3 October 2016; and *The New York Times*, ‘[Ego, Fear and Money: How the AI Fuse Was Lit](#)’, 3 December 2023.

Figure 3. The network of OpenAI's fourteen co-founders: names, roles, experience



KEY

- Still with OpenAI (as of August 2024)
- No longer with OpenAI (as of August 2024)
- Initial investor, no role
- Investor
- Researcher/Engineer

Source: Authors' compilation.

OpenAI's story evidences the importance of network effects. Sam Altman, who has dominated the company's decision-making since its foundation, was a prominent leader at Y Combinator (YC) before joining OpenAI.<sup>19</sup>

Greg Brockman was CTO at Stripe, a company launched in 2009 with YC funding. Trevor Blackwell and Jessica Livingston also joined from YC. Four engineers joined from the Google universe: Ilya Sutskever from Google Brain; and Andrej Karpathy, Durk Kingma and John Schulman from Google DeepMind. Wojciech Zaremba and Pamela Vagata joined from Facebook. Finally, three well-known investors

<sup>19</sup> Wired, [Inside OpenAI, Elon Musk's Wild Plan to Set Artificial Intelligence Free](#), 27 April 2016.

met in the early days of PayPal: Elon Musk, Peter Thiel and Reid Hoffman.

OpenAI emerged from a pre-existing technology ecosystem, where networking, personal relationships and previous successful business stories played a crucial role. This network effect was not only key to getting the right people, but also to ensure the investment capital for an enterprise where there were a lot of ‘unknown unknowns’.

Beyond the mission, the capital needed to attract these top professionals is crucial. Notably, OpenAI offered financial packages comparable to those of Google at the time.<sup>20</sup> OpenAI started from a total initial commitment of 1 billion US dollars (USD), expected to last several years. This unprecedented investment came from some of the biggest names in Silicon Valley.<sup>21</sup> Co-founders Sam Altman, Greg Brockman and Elon Musk contributed in a personal capacity, together with Reid Hoffman, Jessica Livingston and Peter Thiel. Amazon Web Services (AWS), Indian IT company Infosys and (then) Y Combinator-affiliated YC Research also reportedly contributed to the initial round of OpenAI investments as private-sector parties.<sup>22</sup>

### From non-profit to a ‘normal’ company?

Two factors fundamentally changed the nature and course of OpenAI in 2018: the departure of Elon Musk; and the mounting hardware requirements of OpenAI. After internal power struggles, Musk left the company and withdrew the financial support he had initially committed. This forced the organisation to scramble for alternative funding sources. The solution was found in a shift of governance model: the creation of a ‘capped-profit’ company that would sit under the umbrella of the original non-profit organisation.<sup>23</sup>

The ever-growing computational power required for OpenAI to carry out its activities also drove the company away from the non-profit nature. Models became increasingly costly as they grew bigger and required more data and computation to train them.<sup>24</sup> Although precise figures are not disclosed, a 2023 analysis estimated that it cost OpenAI 700,000 USD per day to run ChatGPT alone.<sup>25</sup>

In 2019, OpenAI partnered with Microsoft to raise the money needed. The tech giant supported OpenAI with 1 billion USD to be spent over several years, invested an additional 2 billion USD in 2021, 10 billion USD in 2023 and close to another billion USD in 2024.<sup>26</sup>

### Propensity for speed and risk-taking in product development

ChatGPT was the first chatbot of the new AI generation that was designed to engage in conversations with people and generate unique, human-like text responses. The development and launch of ChatGPT was characterised by OpenAI’s propensity for speed and risk-taking, despite occasional stepping-back. A closer look at the product development process (see Figure 4) illustrates this point: continuous development and improvement cycles; and the release of never-perfect, but increasingly better-performing versions of the model. This way of working has continued ever since ChatGPT was launched for the general public in November 2022.

20 New York Times, [A.I. Researchers Are Making More Than \\$1 Million, Even at a Nonprofit](#), 19 April 2018.

21 Note that tech start-ups normally have to go through a process of several fundraising rounds to get above the 100 million USD mark.

22 OpenAI, [‘Introducing OpenAI’](#), 11 December 2015. The exact amounts contributed are not publicly available.

23 OpenAI, [‘OpenAI LP’](#), 11 March 2019.

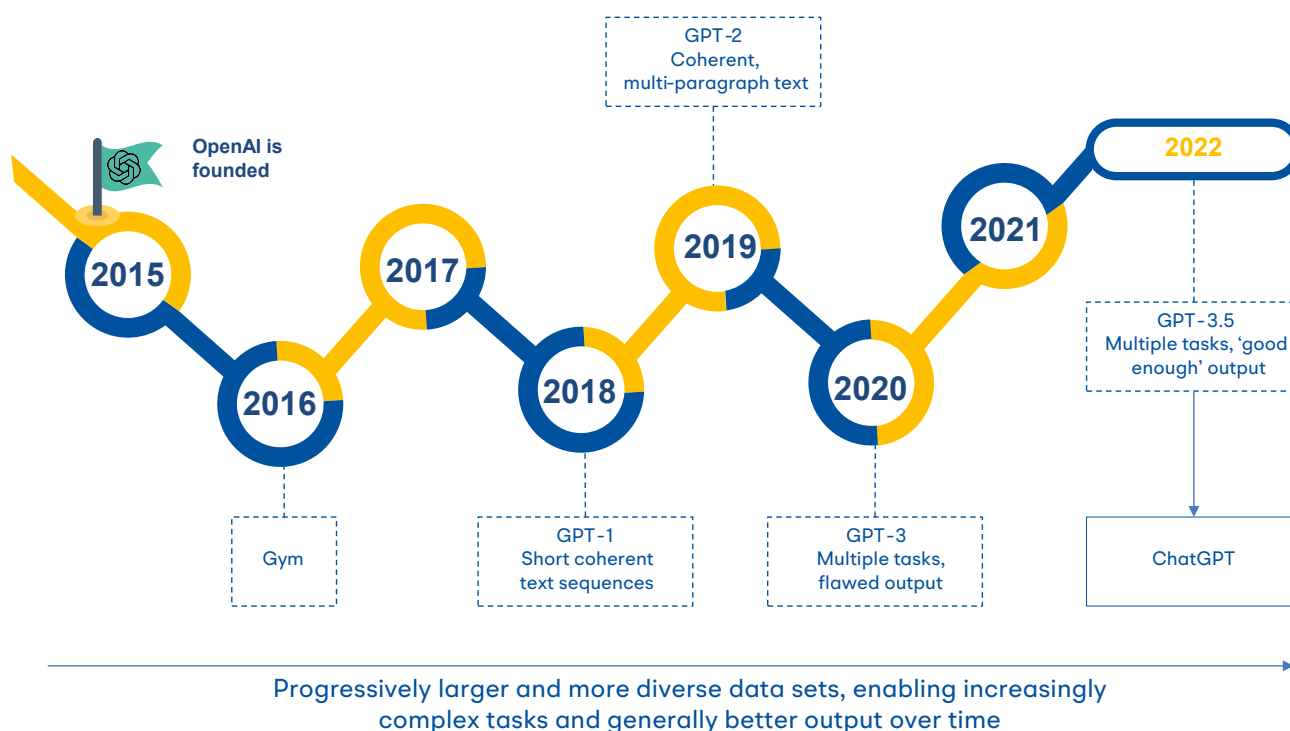
24 The MIT *Technology Review* highlighted that ‘the computational resources that others [e.g. Google] in the field were using to achieve breakthrough results were doubling every 3.4 months’; see MIT *Technology Review*, [‘The Messy, Secretive Reality behind OpenAI’s Bid to Save the World’](#), 17 February 2020.

25 *Business Insider*, [‘ChatGPT Could Cost over \\$700,000 per Day to Operate. Microsoft is Reportedly Trying to Make it Cheaper’](#), 20 April 2023.

26 *Fortune*, [‘Who’s Getting the Better Deal in Microsoft’s \\$10 Billion Tie-Up with ChatGPT Creator OpenAI?’](#), 24 January 2023; *Forbes*, [‘A Short History of ChatGPT: How We Got to Where We Are Today’](#), 19 May 2023; and *TechCrunch*, [‘OpenAI Raises \\$6.6B and is Now Valued at \\$157B’](#), 2 October 2024.



Figure 4. Timeline of product development until the release of ChatGPT



Source: Authors' compilation.

In 2016, OpenAI launched Gym, a platform that allowed researchers to develop and compare reinforcement learning systems.<sup>27</sup> Two years later, GPT-1 showcased the potential of the transformer-based architecture for foundational models.<sup>28</sup> Trained with 7,000 books, this first iteration of GPT – that is, Generative Pre-Trained Transformer – could respond to a prompt by generating short, coherent text sequences. Taking output to the next level, GPT-2 generated coherent, multi-paragraph text. The release of GPT-2 was delayed by a year over concerns about potential misuse by users. OpenAI eventually published the model in

November 2019, after allegedly having carried out a controlled rollout to mitigate some of the identified risks, specifically because of ‘concerns about large language models being used to generate deceptive, biased, or abusive language at scale’.<sup>29</sup>

In 2020, GPT-3 represented a huge leap forwards. Trained on exponentially larger and more diverse sources and datasets than its predecessors, the advanced text-generation capabilities of GPT’s third iteration showed the model’s potential use in multiple tasks, including translation, drafting emails and code, and responding to questions with a certain level of accuracy. According to OpenAI, however, the model was not ready to be launched to the wider public as it still generated highly biased, inappropriate or irrelevant responses to user prompts.

27 *Business Insider*, ‘[The History of OpenAI, from the Early Days with Elon Musk to the ChatGPT Maker being Put on Blast by Scarlett Johansson](#)’, 22 May 2024.

A reinforcement learning system is a machine-learning model that learns how to behave in an environment by taking actions and receiving feedback in the form of rewards or penalties.

28 The transformer-based architecture is a type of neural network architecture that is designed to process and understand data, particularly text.

29 *Forbes*, ‘[A Short History of ChatGPT: How We Got to Where We Are Today](#)’, 19 May 2023; and OpenAI, ‘[Better Language Models and their Implications](#)’, 14 February 2019.



ChatGPT, based on GPT-3.5, was finally launched in November 2022. The chatbot enabled users worldwide to interact with and test it in a multitude of environments and case studies. This widespread use pushed the model to its limits and helped to identify its opportunities, but also its flaws. The application was criticised for not yet being mature enough, as it fabricated academic sources and book names, gave wrong answers to simple mathematical problems and could be manipulated into abnormal behaviour through clever prompting.<sup>30</sup>

The world started to understand the groundbreaking, exponential potential of this revolutionary technology. As its user base grew, the number of OpenAI employees also increased steeply: from around 120 employees in early 2020,<sup>31</sup> to 375 employees in early 2023<sup>32</sup> and 1,500 in July 2024.<sup>33</sup>

Since its launch, OpenAI has improved ChatGPT with newer, multimodal<sup>34</sup> versions: from GPT-4 and GPT-4 Turbo in 2023, to GPT-4o and the o1-series in 2024.<sup>35</sup> The versions after GPT-3.5 are only available via subscription, confirming that OpenAI has moved on from its original mission. Other products – such as image generator DALL-E and video generator Sora – have been, or are expected to be, incorporated into the next iterations of ChatGPT. In June 2024, Apple announced a partnership with OpenAI to

integrate the company's technologies into its products.<sup>36</sup>

Taken together, speed and the propensity for risk-taking in product development seem to have also been important elements for OpenAI's success, alongside the mission, people and capital. The difference with Europe is stark. Some observers argue that Europe also has researchers with knowledge about foundational models and the technology supporting them. However, no one in Europe has so far had the ingenuity to convert the models into a widely available application, while American competitors – especially Google – did not dare to test them beyond very closed environments.

### Public and political response to the GPT frenzy

Following its launch in November 2022, OpenAI's ChatGPT rapidly emerged as the leading AI tool globally, commanding a market share of 60 per cent by August 2024.<sup>37</sup> Amazon has pledged up to \$4 billion USD in investment in Anthropic.<sup>38</sup> OpenAI co-founder Elon Musk positioned himself as a rival to OpenAI with the founding of xAI in July 2023, securing 6 billion USD in May 2024.<sup>39</sup> Big Tech companies and new American players are thus the key players in the rapidly evolving AI market.

Among European contenders, the French start-up Mistral AI shows some potential to compete with the sector's major players. The 'Europeanness' of Mistral AI is questioned by some, however, after the company's involvement with Microsoft, which in turn relies on Nvidia for AI chips. This begs the question: where does Europe stand in the GPT supply chain, besides ASML; and, if not in applications like ChatGPT,

---

30 We Understand AI, 'Fake It Til You Make It: How ChatGPT is Fabricating Resources', 20 February 2024; Descript, 'Why ChatGPT Struggles with Math—and Why That Matters', 15 July 2024; and Lesswrong, 'Testing Ways to Bypass ChatGPT's Safety Features', 5 December 2022.

31 MIT Technology Review, 'The Messy, Secretive Reality behind OpenAI's Bid to Save the World', 17 February 2020.

32 Sam Altman writing on *Twitter.com* (now X), 23 January 2023.

33 *The Information*, 'Why OpenAI Could Lose \$5 Billion This Year', 24 July 2024.

34 Omnimodal refers to the usage and combination of various types of data, such as text, speech or images. While ChatGPT 3.5 only used text, more recent versions have incorporated other types of input and output.

35 *The Verge*, 'OpenAI Turbocharges GPT-4 and Makes it Cheaper', 6 November 2023; and *Business Insider*, 'Sam Altman has Found Himself Using GPT-4o in a "Surprisingly Cool" Way While Working', 18 May 2024.

---

36 OpenAI, 'OpenAI and Apple Announce Partnership to Integrate ChatGPT into Apple Experiences', 10 June 2024.

37 First Page Sage, 'Top Generative AI Chatbots by Market Share', 2 October 2024.

38 *Forbes*, 'Amazon Invests \$4 Billion in Anthropic: A Paradigm Shift in AI', 26 September 2024.

39 *Reuters*, 'Elon Musk Withdraws Lawsuit Against OpenAI', 12 June 2024.

how can we ensure Europe's indispensability in parts of that supply chain?<sup>40</sup>

The popularity of OpenAI's tool sparked significant concern among political leaders and regulators across continents. For example, ChatGPT delayed the finalisation of the EU's AI Act as the rapid advancement highlighted gaps in the legislation being drafted at the time.<sup>41</sup> In October 2024, US President Joe Biden issued the National Security Memorandum (NSM) on AI, a strategy document for the United States to govern and enhance the use of the technology in national defence and intelligence operations.<sup>42</sup> Concerns over AI's potential risks and unpredictable consequences for humanity were underscored by an open letter signed by over 1,000 experts, including politicians, social activists, academics and others.<sup>43</sup>

## Key take-aways for Europe?

Over the past five years, Europe has focused on developing strategies to strengthen its digital economic security in the face of escalating technological rivalry. More recently, this focus has been complemented by top-level calls for greater investments in European competitiveness. Commanding and shaping critical technologies such as AI is considered vital for national security, as it is a fundament of economic growth, economic security and cybersecurity – and thereby, of enhancing the EU's ability to assert its (technological) sovereignty.

To build competitiveness and security in the AI landscape, Europe has to act upon best practices from OpenAI's journey to market success, tailoring these lessons to fit its own circumstances. The harsh reality today is that the

EU relies heavily on foreign companies in all GPAI supply-chain layers.

OpenAI's journey to success lay in its initial mission, people and access to capital, alongside speed and its appetite for risk-taking in product development. Drawing from OpenAI's example, the EU and its member states would benefit from creating an environment that enables quicker development, building networks and ecosystems, and securing substantial funding.

The EU and its member states should not aim to compete on all fronts. A more pragmatic approach is to identify the niches where Europe has a head start and to focus on where the EU can still become 'indispensable' in various layers of the supply chain – that is, where the EU can be essential to the global economic and technological structure, similarly to what Dutch company ASML signifies in the semiconductors industry. This should be done in tandem with an analysis of what the EU considers to be key strategic assets for the future, in line with its values. An example at this intersection is AI applied to the health sector, where the EU ranks second to the United States and is subject to particular attention under the AI Act.<sup>44</sup>

To be practical, the EU needs to accelerate the implementation of the several programmes and initiatives already in place to create a more prosperous and secure European technology landscape. These include, for instance, the Strategic Technologies for Europe Platform (STEP) and the AI Factories initiative, whose goal is to give start-ups the access to computational power that they need to develop their applications. The AI Safety and Security Labs that are and will be established in various EU member states (the first of which in the Netherlands), are important to identify and address risks to national security, partly in collaboration with non-European partners like the United States.

To address the lack of scale on access to capital in Europe, political leaders, both in EU member states and in the European Commission, ought to act on two fronts: working towards a Capital

---

40 Building on initial thoughts presented here, this question will be the focus of the next Policy Brief in this mini-series on GPAI, national security and European indispensability.

41 *Político*, 'ChatGPT Broke the EU Plan to Regulate AI', 3 March 2023.

42 US White House, 'Fact Sheet: Biden-Harris Administration Outlines Coordinated Approach to Harness Power of AI for US National Security', 24 October 2024.

43 *Business Insider*, 'Elon Musk and More Than 1,000 People Sign an Open Letter Calling for a Pause on Training AI Systems More Powerful than GPT-4', 29 March 2023.

---

44 *Binariks*, 'Artificial Intelligence in Healthcare: Market Size, Growth, and Trends', 16 August 2024.

Markets Union, to gain part of the scale needed for many of the investments required; and seriously considering new, innovative and bold solutions, such as the issuance of common EU debt.

Leaders in Brussels and the European capitals must live up to the importance of the moment. Challenges notwithstanding, Europe does have the potential to develop indispensability in specific areas, provided that it embraces calculated risk, promotes growth in ecosystems and capital, and maintains a clear-eyed focus on its long-term objectives.

### About the Clingendael Institute

Clingendael – the Netherlands Institute of International Relations – is a leading think tank and academy on international affairs. Through our analyses, training and public debate we aim to inspire and equip governments, businesses, and civil society in order to contribute to a secure, sustainable and just world.

[www.clingendael.org](http://www.clingendael.org)  
[info@clingendael.org](mailto:info@clingendael.org)  
+31 70 324 53 84

 @clingendaelorg  
 The Clingendael Institute  
 The Clingendael Institute  
 clingendael\_institute  
 Clingendael Institute  
 Newsletter

### About the authors

**Alexandre Gomes** is a Research Fellow at the Netherlands Institute of International Relations ‘Clingendael’ in The Hague, where he is part of the EU and Global Affairs Unit and of the ‘Geopolitics of Technology and Digitalisation’ programme.

**Maike Okano-Heijmans** is a Senior Research Fellow at the Netherlands Institute of International Relations ‘Clingendael’ in The Hague, where she leads the ‘Geopolitics of Technology and Digitalisation’ programme. She is also a Visiting Lecturer in the Master of Science in International Relations and Diplomacy (MIRD) programme at the University of Leiden.

**Disclaimer and acknowledgements:** Research for, and the production of, this Policy Brief were conducted for the General Intelligence and Security Service (AIVD) of the Netherlands and the Dutch Authority for Digital Infrastructure (RDI). The authors sincerely thank the members of AI36 and of Clingendael’s General Purpose Artificial Intelligence Council (GPAI Raad) for their valuable input and comments on an earlier draft of this Policy Brief. Responsibility for the content and the opinions expressed rests solely with the authors.