

Reflections on the French Report on Generative AI

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The French competition authority outlines competition concerns at the upstream level of the GenAI value chain and proposes recommendations. However, more research is needed on computing resources and data.

1. Introduction

The French Competition Authority (FCA) has released its first report on Generative AI (GenAI)¹. The report focuses on the practices of large platforms at the upstream level of the GenAI value chain, examining key inputs required to develop models, including computing resources, data, and talent. Aligning with previous reports by competition authorities in Portugal² and the United Kingdom³, the FCA expresses concerns that a few players might dominate the GenAI sector and distort the competitive process. The report then proposes recommendations to ensure competitive GenAI markets. This analysis delves into these points and highlights research questions on computing resources and data that competition authorities should consider in their ongoing monitoring of the GenAI sector⁴.

¹ Autorité de la concurrence, Generative Artificial Intelligence: The Autorité Issues its Opinion on the Competitive Functioning of The Sector, 28 June 2024 (accessed 3 July 2024). Available at: <https://www.autoritedelaconcurrence.fr/en/press-release/generative-artificial-intelligence-autorite-issues-its-opinion-competitive>

² Autoridade da Concorrência, Issues Paper Competition and Generative Artificial Intelligence, November 2023 (accessed 3 July 2024). Available at: <https://www.concorrenca.pt/sites/default/files/documentos/Issues%20Paper%20-%20Competition%20and%20Generative%20Artificial%20Intelligence.pdf>

³ Competition and Markets Authority, AI Foundation Models Technical update report, 16 April 2024 (accessed 3 July 2024). Available at: https://assets.publishing.service.gov.uk/media/661e5a4c7469198185bd3d62/AI_Foundation_Models_technical_update_report.pdf

⁴ All market studies are available on our GenAI and Competition Hub. GenAI and Competition Hub, *Digital Competition* (accessed 3 July 2024). Available at: <https://www.digital-competition.com/genaiandcompetitionhub>

2. Competition Concerns

Models derive output from large datasets powered by intensive computations. Therefore, the upstream level of the GenAI value chain involves three main inputs: computing resources, data, and talent.

2.1 Computing Resources

Developing and running models requires significant computing power from chips capable of simultaneously handling several computations and dedicated AI workloads, namely graphics processing units (GPUs) and AI accelerator chips. Nvidia leads the GPU market, holding over 80 per cent of the global market share in 2022, and has the indispensable CUDA software to optimise computations on Nvidia chips⁵. However, the GPU market faces a shortage due to high demand. Traditional chipmakers like Intel and AMD, along with cloud providers such as Amazon, Google, and Microsoft, are developing chips to mitigate this shortage. Most model developers rent access to these resources from cloud providers, offering flexibility and scalability without investing in high fixed-cost infrastructures⁶. Partnerships between model developers and cloud providers secure access to cloud computing resources, with cloud providers hosting models for distribution and use in their services⁷.

The cloud sector is highly competitive, with several players active globally, regionally, and nationally. However, competition authorities worldwide have noted a trend towards concentration among a few large cloud providers with high scalability infrastructures⁸. Those "hyperscalers," including Amazon, Microsoft, and Google, collectively held nearly 70 per cent

⁵ Wallstreetzen, Nvidia Corp Statistics & Facts (accessed 3 July 2024). Available at: <https://www.wallstreetzen.com/stocks/us/nasdaq/nvda/statistics>

⁶ Christophe Carugati, The Competitive Relationship Between Cloud Computing and Generative AI, *Bruegel*, 11 December 2023 (accessed 3 July 2024). Available at: <https://www.bruegel.org/working-paper/competitive-relationship-between-cloud-computing-and-generative-ai>

⁷ Competition and Markets Authority, Cloud services market investigation Competitive landscape working paper, 23 May 2024 (accessed 3 July 2024). Available at: https://assets.publishing.service.gov.uk/media/664f1917bd01f5ed3279411c/240520_Competitive_Landscape_WP_2_.pdf

⁸ For a list of reports, see Christophe Carugati, Competition authorities are studying similar digital markets, *Digital Competition*, 10 January 2024 (accessed 4 July 2024). Available at: <https://www.digital-competition.com/infographics/competition-authorities-are-studying-similar-digital-markets>

of the global cloud market in 2023⁹. Some business practices, including financial and technical barriers, might limit customers' ability and incentive to switch providers.

The FCA found that these practices persist in model development, although the European Data Act and France's SREN law to secure and regulate and regulate the digital space partially address them. While recognising the pro-competitive effects of cloud *provider/model developer* partnerships, the FCA expresses concerns about exclusivity and minority shareholdings. The FCA can review these partnerships directly through merger reviews or antitrust investigations and indirectly when reviewing related mergers or investigations concerning one of the partners. At the European level, the European Commission is also monitoring exclusivity strategies in the context of the *Microsoft/OpenAI* partnership inquiry to understand whether some exclusivity clauses might negatively affect competitors¹⁰. The FCA also identifies potential competition concerns from the refusal to access chips and data.

2.2 Data

Data is essential for training models. Developers require large, varied, high-quality datasets. They use public datasets for initial training (pre-training phase). They may also use AI-generated synthetic data, proprietary datasets from their own services (first-party data), or third parties (third-party data). Proprietary datasets are also used for fine-tuning (fine-tuning phase) and deriving outputs from new data sources (grounding phase). Partnerships with third parties, like publishers, are also common to access proprietary data¹¹.

The FCA is concerned that large online platforms have a data advantage due to vast proprietary datasets from their services. However, the relevance of this data depends on the use case. For instance, Meta uses public personal data from Facebook and Instagram for its Meta AI assistant¹², but this data might be less relevant for developing models providing legal

⁹ Synergy Research Group, Cloud Market Gets its Mojo Back; AI Helps Push Q4 Increase in Cloud Spending to New Highs, 1st February 2024 (accessed 3 July 2024). Available at: <https://www.srgresearch.com/articles/cloud-market-gets-its-mojo-back-q4-increase-in-cloud-spending-reaches-new-highs>

¹⁰ Margrethe Vestager, Speech by EVP Margrethe Vestager at The European Commission Workshop on "Competition In Virtual Worlds And Generative AI", 28 June 2024 (accessed 3 July 2024). Available at: https://ec.europa.eu/commission/presscorner/detail/en/speech_24_3550

¹¹ Platforms and Publishers: AI Partnership Tracker (accessed 4 June 2024). Available at: <https://petebrown.quarto.pub/pnp-ai-partnerships/>

¹² Stefano Fratta, Building AI Technology for Europeans in a Transparent and Responsible Way, *Meta Blog*, 10 June 2024 (accessed 3 July 2024). Available at: <https://about.fb.com/news/2024/06/building-ai-technology-for-europeans-in-a-transparent-and-responsible-way/>

information. The FCA also notes potential concerns with *model/publisher* partnerships if they involve exclusivity clauses or if high prices for data access deter other developers. However, unless these high prices are deliberately fixed to exclude rivals, it is doubtful they constitute a competition rule infringement.

2.3 Talent

Talent is crucial for model development. While firms face skilled engineer shortages, they vigorously compete to attract and retain talent. The FCA notes that large online platforms might attract talent more easily, notably due to their financial resources. They might also acquire most of a model developer's staff, as seen in Microsoft's arrangement with InflectionAI, where Microsoft hired most of InflectionAI's 70 staff members, including senior ones. The UK Competition and Markets Authority (CMA) is investigating this "acqui-hire" to determine if it warrants a merger review¹³. The FCA will also monitor this issue closely.

2.4 Vertical integration

The FCA also discusses potential competition concerns at the downstream level of the GenAI value chain, particularly with the deployment of models and AI-powered applications to businesses and end-users. Integration of models into flagship services, such as OpenAI models in Microsoft Office 365, might raise concerns related to tying and self-preferencing strategies. Mobile manufacturers partnering with model developers, like *Apple/OpenAI* and *Samsung/Google*, to use their models for device functionalities also raise vertical integration concerns. Mobile is a significant access point for users, and the Commission has sent information requests to investigate the *Samsung/Google* partnership, which allows Google to pre-install its language model on certain Samsung devices¹⁴.

¹³ Competition and Markets Authority, *Microsoft/InflectionAI* inquiry (accessed 3 July 2024). Available at: <https://www.gov.uk/cma-cases/microsoft-slash-inflection-ai-inquiry>

See also our contribution to the inquiry, Christophe Carugati, Digital Competition's Input to the Competition and Markets Authority on AI Partnerships, *Digital Competition*, 8 May 2024 (accessed 4 July 2024). Available at: <https://www.digital-competition.com/comment/digital-competition's-input-to-the-competition-and-markets-authority-on-ai-partnerships>

¹⁴ Margrethe Vestager, Speech by EVP Margrethe Vestager at the European Commission workshop on "Competition in Virtual Worlds and Generative AI", 28 June 2024 (accessed 3 July 2024).

3. Recommendations

The FCA aims to preserve competitive dynamics in the GenAI sector. It does not recommend legislative changes at the national or European level but calls for the full utilisation of existing European and national laws to preempt potential competition issues. This includes designating cloud services for model distribution under the Digital Markets Act (DMA) and carefully implementing the Artificial Intelligence Act (AIA) by the AI Office to avoid competition distortions.

The FCA also encourages public and private entities to use public supercomputers as alternatives to cloud providers and invites public authorities to propose mechanisms ensuring access to proprietary datasets that consider the economic value of data.

Finally, the FCA recommends that the Commission ask designated firms under the DMA to report minority shareholdings as part of their obligation to disclose acquisitions in the digital sector.

4. Key Research Questions

The FCA thoroughly assesses the upstream level of the GenAI value chain and potential competition issues. However, some assumptions warrant further research that competition authorities should consider in their ongoing monitoring of the GenAI sector.

4.1. Computing resources

The FCA notes that most model developers rely on GPUs provided by Nvidia while acknowledging competition from traditional chipmakers and cloud providers. Investigating the AI chip market deeper to understand competition dynamics, entry barriers, competitive pressures, and potential issues would be beneficial. The UK CMA is expected to release a dedicated paper on AI accelerator chips in the context of its market study on foundation models¹⁵.

¹⁵ Competition and Markets Authority, AI Foundation Models Technical update report, 16 April 2024 (accessed 3 July 2024).

Additionally, the FCA's call for the Commission to pay attention to cloud services for model distribution under the DMA warrants further investigation into the competition dynamics among cloud providers. The UK CMA will likely address this in its cloud services market study¹⁶.

2.5 Data

The FCA outlines several market characteristics, such as the data advantages of large online platforms and the cost of data access to proprietary datasets of content creators. More research is needed to understand the relevance of data for model development and deployment, and to design a legal and economic mechanism for accessing proprietary data at competitive prices that reflect the data's economic value for rightholders and the financial capabilities of model developers.

To discuss this topic in more detail and commission a consultation or a research project, please contact us:

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¹⁶ Competition and Markets Authority, Cloud Services Market Investigation (accessed 4 July 2024). Available at: <https://www.gov.uk/cma-cases/cloud-services-market-investigation>

About

Digital Competition

Digital Competition (www.digital-competition.com) is a research and advisory firm dedicated to advancing open digital and competition policies that promote innovation. We provide our members and clients with impartial, forward-looking analyses on emerging global digital and competition issues, helping to shape policies that benefit everyone. We engage with stakeholders, offer insights, and make policy recommendations on complex and novel policy developments. This analysis was conducted independently and did not receive any funding.

This paper is part of our GenAI and Competition Hub (<https://www.digital-competition.com/genaiandcompetitionhub>). It strives for responsible GenAI development, ensuring favourable market conditions that benefit all. We leverage expertise and dialogue with stakeholders and competition authorities while maintaining our commitment to open access, full transparency, and impartial advice. Our Hub helps stakeholders and decisionmakers navigate complex and rapid GenAI market and regulatory development. We also nurture the discussion in designing competition policies that deliver favourable market conditions in the context of intense monitoring of GenAI by competition authorities worldwide and the forthcoming 2024 G7 Italian presidency.

We provide research and market studies and invite stakeholders to contribute with relevant input. We also offer private consultations, training sessions, and conferences on GenAI and competition. Contact us to join the Hub and/or for consultation/press inquiries.

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Dr. Christophe Carugati (christophe.carugati@digital-competition.com) is the founder of Digital Competition. He is a renowned and passionate expert on digital and competition issues with a strong reputation for doing impartial, high-quality research. After his PhD in law and economics on Big Data and Competition Law, he is an ex-affiliate fellow at the economic think-tank Bruegel and a lecturer in competition law and economics at Lille University.