

United Kingdom

COMPETITION

Report—impact of Artificial Intelligence Foundation Models on competition—barriers to entry for creation of Foundation Models—impact of Foundation Models on competition in other markets—guiding principles

☞ Artificial intelligence; Competition and Markets Authority; Competition policy

Competition and Markets Authority publishes report on AI Foundation Models

The United Kingdom's (UK) Competition and Markets Authority (the CMA) has published its initial report into artificial intelligence (AI) foundation models and their impact on competition.¹

Background

Foundation models are “large, machine learning models trained on vast amounts of data”. Foundation models can be used for a variety of tasks, and many businesses already offer products and services that utilise their technology. It is, therefore, unsurprising that the CMA has adjudged that foundation models should be carefully looked at, given their potential to generate transformational change in a number of industries in short order, as the technology rapidly develops. According to the CMA, foundation models have the potential “to spur innovation and economic growth”² in a variety of sectors including search and productivity software, social media, healthcare, and robotics.³

The CMA's key findings

The competition implications of AI foundation models are assessed by the CMA in two key ways: (i) the competition and barriers to entry in the development of foundation models themselves (in-market concerns); and (ii) the impact of foundation models on competition in other markets (out-of-market concerns).

(i) In-market concerns

The CMA analyses the market for foundation models itself in much the same way as it has “previous technology-driven markets”.⁴ That is, it warns that “network effects and switching barriers can lead to consolidation, weak competition, and a ‘winner-takes-most’ outcome”.⁵ The CMA therefore focusses on the “key inputs”, such as data, technical expertise or computing power, which are required to enter into or expand within the foundation models market.⁶ Concerns on data arise, for example, with the possibility that publicly-available data could become “fully exploited” in the near future, which would mean that access to proprietary data becomes all the more important.⁷ The CMA additionally points to concerns that foundation model developers may have advantages on account of data collected through activities on other markets. As the CMA notes, “vertically integrated firms may have easier access to proprietary data, such as data from user interactions on social media”.⁸

The CMA's concern over the availability of necessary inputs to foundation models, and the potentially resultant barriers to entry and expansion, leads it to note that “the market is more likely to trend towards positive outcomes

¹ Competition and Markets Authority (CMA), “AI Foundation Models: Initial report” (18 September 2023), available at: <https://www.gov.uk/government/publications/ai-foundation-models-initial-report>.

² CMA, Press Release “Proposed principles to guide competitive AI markets and protect consumers” (18 September 2023), available at: <https://www.gov.uk/government/news/proposed-principles-to-guide-competitive-ai-markets-and-protect-consumers>.

³ CMA, “AI Foundation Models: Initial report” (18 September 2023), paras 4.4–4.8, p.55.

⁴ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.3.2, p.27.

⁵ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.3.2, p.27.

⁶ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.3.1, p.27.

⁷ CMA, “AI Foundation Models: Initial report” (18 September 2023), paras 3.7–3.8, pp.28–29.

⁸ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.3.9(b), p.30.

if, inter alia, firms cannot leverage a leading position in other markets to unduly restrict access to firms they compete with in those markets”.⁹ More broadly, the CMA recommends that developers of foundation models who are initially successful should face ongoing competition, including from new entrants, and that a range of developers should be able to access key inputs for foundation models on fair terms.

(ii) Out-of-market concerns

With regards to the impact of foundation models on competition in other markets, the CMA discusses in detail the products and services in which foundation models are deployed. The CMA’s key thesis is that foundation models “could become an important input in a wide range of markets”,¹⁰ and are already being monetised by firms in a number of ways. Whilst the CMA notes that the rise of foundation models could disrupt vertically-related markets and entrenched market positions, it also notes that “there is a risk that certain structural features could arise” in downstream foundation model markets, such as the costs of switching between foundation model services, which could weaken competition.¹¹ Market power of foundation model providers in vertically-related or parallel markets could also lead to exclusionary abuses such as tying, or restriction of access to inputs.

Concerns such as those summarised above led the CMA to propose the conditions under which there are more likely to be competitive outcomes. Such conditions include where “foundation models and the systems they use are interoperable with one another”, and where consumers can easily switch between foundation model services, or use several of them at once.¹²

Guiding principles

Whilst the CMA makes clear that no further regulation is planned for now, it notes that it will introduce seven principles¹³ to guide the development of the FM market:

- (a) *Accountability* for the outputs provided by developers and deployers to consumers.
- (b) *Access*, including to data, computing power, expertise and capital, and a highly competitive market notwithstanding the existence of “powerful partnerships and integrated firms”.
- (c) *Diversity*, wherefore the inclusion of ‘open-source’ models can help “reduce barriers to entry and expansion”.
- (d) *Choice*, where businesses have a range of deployment options, including in-house development and partnerships.
- (e) *Flexibility* “to switch or use multiple foundation models according to need”.
- (f) *Fair dealing*, entailing not just the absence of anti-competitive conduct, but also conditions of competition which can counteract any negative effects which do arise.
- (g) *Transparency* throughout the foundation model value chain, including as between developers and deployers, and suppliers and end users, such that all are informed about the use of foundation models and the inherent limitations.

⁹ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.3.111, p.53.

¹⁰ CMA, “AI Foundation Models: Initial report” (18 September 2023), paras 4.4–4.8, p.55.

¹¹ CMA, “AI Foundation Models: Initial report” (18 September 2023), paras 4.23–4.27.

¹² CMA, “AI Foundation Models: Initial report” (18 September 2023), para.4.63, p.78.

¹³ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.7.2, p.120.

Conclusion

The CMA is now reaching out to different stakeholders with a view to publishing an update on the seven principles and how they have been received and adopted in early 2024. Such stakeholders will include not only foundation model developers such as Google and Microsoft, but also “innovators, challengers and new entrants” among others.¹⁴

The CMA will work closely with the Information Commissioner’s Office, the Financial Conduct Authority and Ofcom under the new Digital Regulation Cooperation Forum to “improve coordination and cooperation between regulators in digital markets”, including by ensuring “coherence between their respective regimes”.¹⁵ Once the Digital Markets, Competition and Consumers Bill comes into force, the CMA is set to obtain new powers over firms with strategic market status, which will in turn help to set the course for the regulation of AI-related markets going forward. The CMA warns that it is “ready to intervene where necessary.”¹⁶

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¹⁴ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.8.3, p.122.

¹⁵ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.6.15, p.107.

¹⁶ CMA, “AI Foundation Models: Initial report” (18 September 2023), para.8.5, p.122.