Open Loop UK: Competition in AI Foundation Models and the CMA AI Principles

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Foreword

The emergence of generative AI has opened up new possibilities for innovation and growth and has the potential to transform industries and revolutionize the way we live and work. At the heart of this transformation are foundation models — large-scale, general-purpose AI systems that can be adapted to a wide range of tasks and applications.

As these models continue to evolve, it is essential that we foster a competitive environment that encourages innovation and ensures equitable access to the benefits of AI technologies across society. This requires competition authorities, policymakers, and businesses alike to stay abreast of market developments and take steps to ensure competition remains vibrant and dynamic. The interaction between AI and competition law has become a hot topic globally, with a number of competition authorities considering the issue. In the UK, the Competition and Markets Authority (CMA) has taken a leading role in exploring how businesses can unlock the opportunities presented by generative AI. Their collaborative approach, having launched a study into AI Foundation Models in 2023 with crucial input from industry and experts, followed by an AI Foundation Models Technical Update Report in April 2024, has been particularly welcome.

This Open Loop UK program was designed to further look into the prospects for competition within generative AI, bringing together a diverse cohort of organizations and experts to examine the current state of the UK's foundation model market, and how the CMA — through their AI principles and other tools — can play an even more pivotal role.

The CMA has both a unique opportunity and an important responsibility to fulfill their mandate by accelerating growth in the AI sector and wider economy. This has recently been reinforced in the draft Strategic Steer issued by the Government. While this report considers the CMA AI principles in-depth, they exist as part of a wider regulatory ecosystem. Looking ahead, this will involve clarifying and mitigating any conflicts between competition principles and other extant and emerging regulations (especially data protection law) that impede the emergence of AI champions in the UK.

I hope this report serves as a catalyst for continued dialogue and action among all stakeholders. The insights and recommendations outlined here are intended to guide policymakers and industry leaders in creating a competitive and inclusive AI ecosystem. By working together, we can ensure that AI technologies are developed and deployed in ways that deliver innovation, growth and prosperity for all.

Chris Yiu
Director of Public Policy, Northern Europe
Meta

Foreword

The rapid evolution of artificial intelligence (AI), particularly generative AI, has brought about both significant opportunities and unique challenges for enterprises. AI adoption is growing fast. A recent Accenture survey found that 86% of participating CEOs said they will invest more in new AI in 2025[1] while our Accenture UK gen AI research found that respondents expected to spend 15% of their 2025 IT budgets on gen AI, up from 10% in 2024. [2] Given this rapid growth, it is crucial that effective governance is a central tenet of foundation model development to ensure a promising future for enterprises and people alike.

The UK government has seen how AI can change the world as signaled by their broad acceptance of the AI Opportunities Action Plan, which emphasizes the importance of supporting investment in AI and economic growth. The CMA has released seven principles for AI, which ensure customer protection while promoting competition. Guidance like this is key to achieving the UK's goal of fostering a thriving market for model development and deployment.

The challenge with these guidelines is to understand how they work in practice and to continue to adapt them to meet the needs of businesses and of society. This is where Meta's Open Loop UK program has made an important contribution by connecting AI policymakers with experts and companies to help ensure that their guidelines work as intended. And this is why Accenture is proud of our long-standing work together, first in the US and now in the UK.

When we began working on the Open Loop UK program in July of 2024, Accenture was excited for the opportunity to use our broad experience working with businesses to better understand the challenges and opportunities they face when using open- and closed-source foundation models. Now looking back on the work, we are proud of the findings, from which we have identified numerous opportunities for the CMA to enhance their guidance.

These experiences are always shaped by the people you work with along the way. I am grateful for the participating organizations and experts, for our colleagues at Meta, and for the team of Accenture practitioners who shaped this report. I look forward to seeing how it drives future conversation and innovation on the road to AI-powered reinvention.

Lie Junius
Government Relations Lead, EMEA
Accenture

About Open Loop

Meta's Open Loop is a global program that connects AI experts, policymakers, and companies to help develop effective and evidence-based policies for AI and other emerging technologies by gathering detailed feedback on new or existing policies, regulations, laws, or voluntary frameworks.
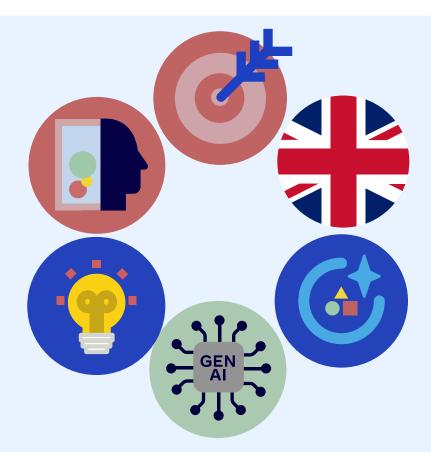
The aim is to improve the quality of guidance and regulation on emerging technologies, ensuring that they are understandable, feasible in practice, and likely to achieve their intended outcome.

This report presents the findings and recommendations of the Open Loop UK program on Competition in AI Foundation Models and the CMA's AI principles. The program was launched in September 2024 with our research partner, Accenture.

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We would like to thank the following organizations for their participation throughout the program — without their commitment and active involvement, this work would not have been possible:

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We are indebted also to our group of experts from across the AI and competition ecosystems who shared their deep expertise, contributed to the development of the program's research approach, and supported knowledge building amongst the company cohort:

Executive Summary

The CMA AI principles, initially released in September 2023 and updated in April 2024, aim to guide the UK foundation model (FM) market towards positive outcomes for competition and consumer protection.

> This Open Loop program convened a cohort of 14 UK-based organizations, as well as experts from regulation, policy and AI research to provide insights on the drivers for a fair, dynamic market for FM development and usage. This was done with the goal of supporting effective development of the CMA AI principles and providing recommendations on suggested actions the CMA and other Government agencies should take to ensure a competitive FM market where consumers, businesses and society can reap the full benefits of FM development and deployment in the UK and beyond.

The participating organizations represented the public, private and social enterprise sectors, and ranged in size from large multinationals to medium-sized enterprises and startups[1]. Through desk research, interviews, surveys and workshops with these organizations we sought to understand how and why companies choose to leverage FMs for generative AI development, as well as the key challenges to development and usage of FMs in the UK market and broader regulatory context. Lastly, as an important "tool" in the CMA toolbox, we explored how the CMA's AI principles guide the effective functioning of the FM market, and how companies can best align with them to ensure that their business practices contribute to a thriving AI development ecosystem.

A note on our timeline and policy developments in the UK

The draft CMA AI principles were developed after consultation with over 70 stakeholders in May 2023. After a further period of engagement with organizations who provided feedback on the draft principles, they were finalized and published in April 2024 in the CMA's "Technical Update Report". As our data collection commenced shortly after the publication of the final principles, in September 2024, we had the opportunity to gather insights from participating companies and experts regarding their views on these newly established principles. It is important to acknowledge however that the final principles had only been in effect for approximately 4 months at the time of our data collection. While the gathered data provides valuable insights into the challenges facing foundation model developers in the UK and how the CMA AI principles address these challenges, it is prudent to consider the novelty of these principles when interpreting the results and recommendations presented in this report.

Furthermore, on 13 January 2025 the UK Government's Department for Science, Innovation and Technology (DSIT) published the "AI Opportunities Action Plan" and the Government response to the recommendations set out in this plan. The Action Plan, drafted by Matt Clifford CBE, sets out a bold vision for the UK as a leader in AI and presents 50 recommendations which will enable the realization of this vision. We are pleased to say that while our findings and recommendations were developed in advance of the release of the AI Opportunities Action Plan, many of our recommendations do mirror and reinforce those put forth in the plan, as well as presenting some further novel proposals for supporting the growth of the UK's AI sector and further adoption of AI.

The main findings from our research on the AI foundation model market in the UK and the CMA's AI principles are as follows:

→ Lack of clarity on interactions between regulations relating to foundation models is hampering understanding and uptake of FMs among UK organizations, specifically in areas such as the intersection of data use and access;

→ Access to resources (compute, data and skilled labour) are a challenge to the development and use of foundation models;

→ Partnerships, mergers and acquisitions can provide pathways to innovate and grow, but industry needs clarification of CMA concerns;

→ Open source models, tools and components support choice and flexibility for organizations of all sizes and scales;

→ Efficacy of the CMA AI Principles could be enhanced through greater awareness of the principles;

→ Ambiguity within and between the CMA AI principles remains and undermines the ability of organizations to align their data and other practices with them;

→ Organizations are unclear about how the CMA will employ the principles, particularly with respect to whether and how they may be viewed in the context of enforcement.

Below we outline our key Recommendations for the CMA which are aimed at addressing the above challenges, as well as additional "Opportunities" which could be realized by other governmental agencies either in collaboration with the CMA or separately. The ultimate goal of highlighting these Recommendations and Opportunities is to create an environment in the UK which stimulates fair and robust competition to achieve a thriving and innovative market for AI model development and adoption. Further details on these Recommendations and Opportunities can be found in chapters 2 and 3 of this report.

Recommendations

From our findings, we have formulated the following recommendations for the CMA:

① **Encourage reasonable transparency in model usage and deployment through cross-regulatory collaboration to drive confidence in FM use.**

The CMA should provide guidance around proportionate and accessible reporting for generative AI models. This would both provide clarity to model providers on the level and type of information they should be aiming to share and insight to downstream developers who are fine-tuning and deploying models, as well as informing them of their own responsibilities to secondary deployers or end-users.

Guidance could include how developers can effectively report on their development activities without compromising their IP, personal data of their users, or commercially sensitive information. To achieve this, the CMA could encourage detailed documentation or model cards covering pre-training, fine-tuning, and other specifications, but the development and drafting of such guidance would require tight coordination with other regulators or agencies whose remit covers data use and transparency, particularly the ICO.

② **Support improved access to the resources needed for development and deployment in the foundation model market — data, funding and talent.**

The CMA should deepen use of existing initiatives, such as the DRCF's AI and Digital Hub and the new Regulatory Innovation Office to further improve resourcing for companies relating to AI usage and development such as access to compute, infrastructure and skills training.

The CMA's AI principles could provide further guidance on optimizing and prioritizing development practices to address budget constraints, helping organizations focus on areas where benefits outweigh costs. Additionally, the CMA could consider offering support on overcoming barriers to AI adoption, such as talent shortages and skills gaps, by providing recommendations on necessary investments and training.

③ **Encourage uptake of open source FMs to reduce barriers to entry and provide companies with greater control over data storage and handling.**

The CMA should support open source adoption and establish sandboxes for testing AI models to enhance data access and foster innovation via the DRCF and other regulatory cooperation fora. While the CMA is not responsible for the AI investment strategy overall, they can ensure that open source solutions continue to be identified as a specific driver for diversity and choice in the AI market through their guidance, including the AI Principles.

④ **Share guidance on potential CMA concerns regarding partnerships, mergers and acquisitions to support innovation and growth.**

The CMA should develop supportive resources and share guidance on how to avoid potential competition concerns with partnerships, mergers and acquisitions. Partnerships in particular can do much to enhance the functioning of the UK FM market through providing enhanced service offerings to consumers, and therefore the CMA should also work to expedite partnership reviews given the fast moving nature of generative AI product development and markets.

⑤ **Encourage practices and harmonization which enable greater choice in managed cloud-hosting services for organizations.**

The CMA should support — within any of their relevant guidance — efforts which reduce friction in moving data between cloud hosting and service providers, as this can limit the choice of provider for downstream developers and fine-tuners and also the choice of models available, if the provider carries a limited selection.

The CMA can also encourage accuracy in pricing related to cloud-hosting and related services and features such as performance, cost and security by developing best practice guidance on disclosures of prices and services provided.

⑥ **Scope to raise awareness and understanding of the AI principles.**

The CMA AI principles were welcomed by the participants of the program who were aware of them, however this was less than half the group. Increasing awareness of the principles through continued and even enhanced engagement with industry, (e.g. "meet the market" days) and the provision of training resources will help to increase the visibility of the CMA's AI principles and further guidance in areas related to the principles. It will also help to enlist organizations in supporting and helping to build a thriving and dynamic AI market through a shared understanding of what "good" looks like.

⑦ **Provide further clarity on the definitions of the principles through a glossary or more comprehensive descriptions.**

The CMA should produce a glossary that is reflective of current terminology and approaches within AI FM development and reflects the diversity of development options throughout the full AI stack. This will support practical implementation and ensure relevance across various contexts, ultimately promoting fair competition and innovation in the AI ecosystem. Further clarity is also needed on how the principles interoperate with the CMA's ambition to promote environmental sustainability and help the UK reach its Net Zero ambition.

⑧ **Produce flexible, iterative guidance to connect high-level principles with sector-specific implementation, linking to the CMA's prioritization and toolkit.**

To support practical implementation, the CMA should provide role-specific guidance that maps the principles to different stages within the AI value chain, perhaps offering mapping which aligns with current AI actor taxonomies offered by the OECD or Partnership on AI . The CMA should also consider providing sector-specific use cases in potential guidance.

Opportunities
(Findings and Recommendations) that are beyond the CMA's scope

Our research also revealed additional opportunities for improving the FM market, particularly regarding increasing access to the resources — data, compute infrastructure, skilled labour — needed for the effective development of foundation models in the UK. While perhaps outside the direct scope of the CMA, these opportunities should be acknowledged and addressed by policymakers to support growth and innovation in the FM market, and as well as being in many cases fundamental to underpinning the work of the CMA, so we include them in this report for consideration.

① **Clarify roles across the AI value chain stages, particularly for open source.**

Defining role-based responsibilities across the value chain, from FM developers to end-users, is essential to enhance confidence in the deployment of generative AI. This includes leveraging existing cross-regulatory partnerships (between for example the ICO, CMA and OFCOM) to clarify responsibilities for open source model users as they develop and deploy models across different industries and contexts, particularly concerning any data protection requirements. Additionally, providing domain-specific guidance that includes real-world examples will help organizations navigate accountability effectively, fostering greater adoption of FMs.

(2) **The Government should utilize existing efforts around AI assurance to take a cross-governmental approach to defining actors within the AI value chain.**

The Department for Science, Innovation and Technology (DSIT) should use the AI Assurance Platform[2], which acts as a one-stop-shop for information on the actions businesses can take to identify and mitigate potential risks and harms from AI, to offer opportunities to take a cross-governmental approach to defining actors within a shared terminology. Alternatively, the proposed terminology tool for AI assurance could also include definitions of actors within the AI value chain. As part of such an effort to create a taxonomy of AI actors across the AI value chain, it will be important to consider international taxonomies, such as those of the National Institute of Standards and Technology in the United States (NIST), Partnership on AI (PAI), and the Organisation for Economic Co-operation and Development (OECD).

(3) **The Government and the ICO should encourage sandboxes and resource pooling initiatives to support data access.**

The Government and other regulatory authorities, such as the ICO, should support improved data access for AI development through sandboxes and resource pooling initiatives. Resource pooling may allow smaller organizations to form consortiums to share resources, including data, compute, expertise, and funding — while the creation of specific research grants and assets such as a national data bank of anonymized, licenced or synthetic data sets would help power R&D efforts.

(4) **The Government should work to increase access to compute and underlying infrastructure for UK businesses.**

To strengthen its FM ecosystem, the UK Government must increase access to compute and strengthen all aspects of IT infrastructure, addressing key limitations that hinder innovation and competitiveness. This could be done through driving forward long-mooted reforms to the planning and energy systems in the UK, support for international data transfers, and capital investments in high-speed internet which are partially or fully funded by the Government.

⑤ **The Government should support training and skills development to drive innovation and competition.**

The Government should set-up a task force to explore ways in which the playing field can be leveled for both governmental and non-governmental organizations in need of talent and skills with limited resources, such as start-ups and scale-ups.

To boost competition in AI, the UK could also benefit from incentivizing international talent and increasing support for startups through a dedicated tech visa scheme, supported by clear standards for educational levels and developer certifications.

Targeted investments in AI and Machine Learning programs which could be easily scaled via educational institutions and on-the-job training would help build needed skills and support the growth of a competitive AI ecosystem in the UK.

⑥ **Support the development and deployment of open source AI through future AI legislation.**

Future legislation should support open source AI given its important role in improving flexibility, choice, affordability and transparency within the FM ecosystem. Open source models can offer more adaptability for integration across diverse systems and datasets while ensuring that FM deployers have options, though there are naturally cases where closed models may offer performance or customization advantages.
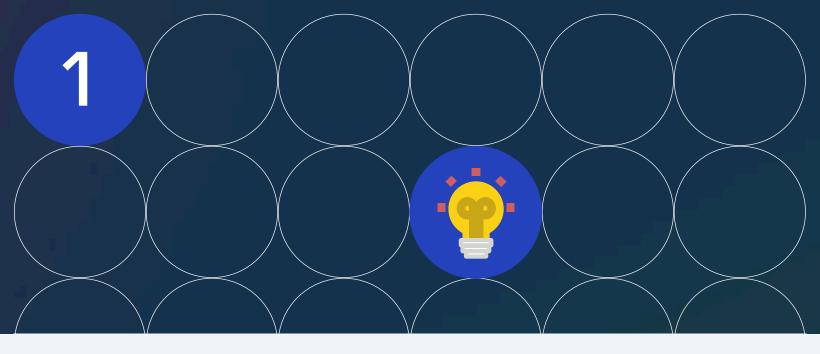
⑦ **There is a need for stronger regulatory cooperation nationally and internationally to support UK businesses in actioning the CMA AI principles.**

The CMA and other regulators should further cooperate to ensure that there is absolute clarity as to which aspects of AI regulation are within each organizations' remit, and what the approach is in nuanced and complex areas such as data use for model training and fine-tuning. Existing Government vehicles for enhancing cooperation should be maximized, as well as existing international initiatives like the OECD and cooperation between AI Safety and Security Institutes. Organizations in the UK would like further clarity on the interaction of competition and data protection laws, data transfers, IP and how they can access the resources needed to develop and use FMs.

Introduction

1

Generative artificial intelligence (generative AI) is a subset of AI that uses algorithms to create new content such as text, images, music, and more, based on input data. It leverages techniques like machine learning and deep learning — particularly neural networks — to understand patterns and generate original outputs that resemble the training data. By automating creative processes, generative AI enables innovation in various fields including art, design, and content creation, while also enhancing efficiency in tasks that require human-like creativity.

Foundation models (FMs) are AI systems with broad capabilities that can be adapted for a more specific purpose. FMs therefore provide a base on which more specialized AI models — including applications which deliver creative solutions and greater efficiencies in every field — can be built. Due to the potential benefits, generative AI is now becoming seen as both critical to long-term business success and for driving the achievement of broader economic and social goals.

The UK has been a frontrunner in developing and launching initiatives that consider competition in the FM market with the aim of fostering a competitive, consumer-centric FM market that enables more companies and people to access the benefits of generative AI. In September 2023, the UK's Competition and Markets Authority (CMA) published an initial report on FMs, including a set of draft AI competition principles aimed at positively guiding their development and deployment and ensuring a dynamic market in the UK. In April 2024, the CMA published a technical update report presenting the final AI competition principles (see Annex 1), which had been updated based on monitoring and stakeholder feedback. The CMA has urged firms to play an active role in realizing these principles by aligning their business practices with them[2].

With this Open Loop program we wanted to establish the challenges and opportunities facing UK organizations as they endeavor to build and use foundation models, as well as whether the CMA's AI competition principles (hereafter: "the principles") were known, understood, and having the desired effect. Therefore, this Open Loop UK program focused on exploring the following questions:

1) Understanding the current FM market:

    1a. What do businesses consider to be main deployment challenges?

    1b. What is needed from regulators to tackle these issues?

2) The CMA's AI principles:

    2a. How might businesses align their practices with the CMA's AI competition principles?

    2b. How can the principles be further iterated upon to enhance their impact?

Research and survey methodology
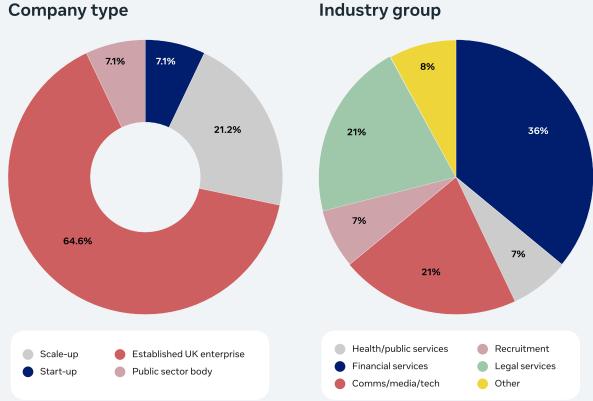
This research involved a comprehensive online survey and in-depth interviews with 14 companies who are currently deploying AI FMs; 3 meetings with an expert focus group; and an in-person workshop with participating companies, experts, and officials from the Government and the CMA (see Annex 2 for further details).

In our survey design, for some questions we employed a 5-point Likert scale (1-5) to gauge respondents' levels of agreement or disagreement with a series of statements pertaining to the current FM market and CMA AI principles. This approach enabled us to quantify and analyze the degree of consensus among participants.
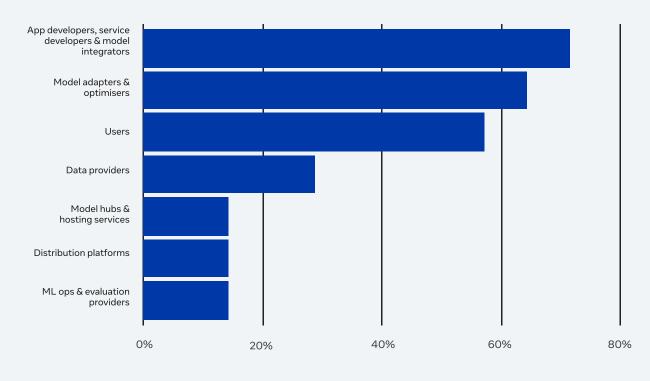
Throughout the subsequent chapters, the average agreement or disagreement scores will be reported in brackets, denoted as (X), where X represents the mean score on the 1-5 scale. For the purpose of interpretation, it is important to note that a score of 5 indicates unanimous agreement or disagreement (100% of respondents), whereas lower scores reflect varying degrees of consensus or dissent.

About the company cohort

The program brought together a group of 14 companies, representing a diverse cross-section of the UK's AI landscape, including both B2B and B2C firms from highly regulated industries, lower-margin sectors, public entities, and SMEs. The cohort spanned a range of industries, including banking & finance, health & pharma, insurance, media, and social enterprise. Company representatives included leaders from strategy, legal, and product teams, each bringing unique expertise in implementing generative AI in the UK regulatory context. In terms of value chain position, the majority of the cohort identified as app/service developers and model integrators, model adapters and optimizers, or users of AI FMs.

Company type

Legend:
- Scale-up
- Start-up
- Established UK enterprise
- Public sector body

Values shown: 7.1%, 7.1%, 21.2%, 64.6%, 7.1%

Industry group

Legend:
- Health/public services
- Financial services
- Comms/media/tech
- Recruitment
- Legal services
- Other

Values shown: 8%, 36%, 21%, 7%, 7%, 21%

AI value chain position

Categories:
- App developers, service developers & model integrators
- Model adapters & optimisers
- Users
- Data providers
- Model hubs & hosting services
- Distribution platforms
- ML ops & evaluation providers

Axis: 0%, 20%, 40%, 60%, 80%

Findings and Recommendations on Existing Deployment Challenges in the Foundation Model Market

2

This chapter outlines the challenges facing UK organizations and the actions needed to address these current challenges. Undertaking these actions will further enhance and support the adoption of the CMA's AI principles and will ultimately deliver a thriving AI FM marketplace and ecosystem.

We have presented recommendations for the CMA and other policymaking and regulatory bodies based on the following insights:

a. Roles and responsibilities as well as the different actors in the generative AI value chain could be clarified to underpin understanding of the emerging market and confidence in FM use;

b. Organizations would like further clarity on the interaction of competition and data protection laws and how they can access the resources needed to develop and use FMs;

c. Companies would value guidance what to avoid when negotiating and structuring partnership deals, mergers and acquisitions within the sector so that they can support growth and innovation;

d. Open source models, tools and components offer flexibility and support transparency for developers and consumers;

e. Data is a critical input to developing innovative AI systems and products, and companies are eager to explore both increasing access to data and clarifying rules around its use in generative AI systems;

f. There needs to be increased investment in capital projects which deliver compute infrastructure in the UK;

g. AI development and other needed skills are in short-supply and more needs to be done to ensure a pipeline of available talent in the UK.

Below we provide more detail on what we uncovered in our research and have clustered our findings under 4 subtitled sections numbered 2.1-2.4. Each section concludes with the related Recommendations and Opportunities. Furthermore, where the Government has committed to a Recommendation from the AI Action Plan which relates to or aligns with our Recommendations, we have noted this in a call-out box.

2.1 Lack of clarity on interactions between regulations relating to foundation models hampering understanding and uptake of FMs among UK organizations

Regulatory uncertainty regarding accountability for generative AI outputs in particular has slowed uptake of foundation models, particularly with open source.

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The inconsistency and unpredictability of AI regulation creates a challenging landscape for businesses aiming to make long-term decisions in AI development. A recent example was the UK's Government's reversal of the broad exemption for Text Data Mining (TDM) for training AI models, opting instead to develop a yet-to-be-realized "code of practice" for copyright and AI[3]. While the code would be welcome in many respects, it leaves a significant question mark over an organization's ability to use models developed with data obtained during the TDM exemption period, or where the data provenance is unclear. This lack of clarity on future policies creates uncertainty for businesses, making them hesitant to invest fully in AI development due to concerns that shifting regulations could render their strategies or products non-compliant.

In response, participants on the program reported developing their own ethical standards and responsible AI frameworks, using a mix of internal guidelines and trusted external advice to navigate the gray areas in regulation. Some firms even uphold standards stricter than those required by current laws. This conservative strategy often includes human-in-the-loop (HITL) measures, where human oversight checks AI outputs before they are fully deployed. While effective as a safeguard, HITL processes are time, labour and compute intensive, limiting scalability and slowing the natural rollout of AI solutions across organizations or to end-users.

Currently, while there is some guidance on AI transparency and explainability available to companies who are developing and deploying AI systems[4], there are no transparency measures in the UK specifically for foundation models. Indeed, just half of surveyed participants on the Open Loop program reported feeling confident about what information should be shared with consumers regarding FM use, with many citing concerns about the

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level and type of information which should be shared given the complex nature of the technology. Issues with inter-organizational sharing were also noted, and the creation of flexible templates which can aid documentation might be considered to support companies as they grapple with deciding what type of information to share, and with whom. Transparency should be encouraged in so far as it supports validation of the models evaluation and testing results, however participants also noted that careful consideration must be given so as not to force companies into a situation in which they are having to expose legally or commercially sensitive or copyrighted information or data.

Interestingly, our participants reported that open source models scored higher on facilitating transparency and accountability (4.4) than closed source models (3.2). Open source options may offer clearer documentation and data retention practices, reducing ambiguity. For explanations of the scores in brackets above see the "Methodology" section in Chapter 1.

However, participants noted that some companies who develop FMs keep model weights closed — for example, this can be an important measure to protect potentially sensitive data from being revealed, or maintain a competitive edge — however it could in some circumstances limit understanding of the model inputs and functioning and therefore optimization potential. Balancing transparency with intellectual property protections is essential; not every technical detail must be disclosed, but consumers should have a baseline understanding of data origins, usage, and retention. Clearer guidance and templates for model transparency in these key areas would create a more level playing field, fostering trust while still supporting innovation.

RECOMMENDATIONS FOR THE CMA

☆ **RECOMMENDATION 1**

Encourage transparency for output across the AI value chain through cross-regulatory collaboration.

In alignment with the CMA's Transparency principle, the CMA should provide clear guidance around transparent and accessible disclosure and reporting for generative AI models. To achieve this, the CMA could encourage the use of documentation templates or model cards covering pre-training, fine-tuning, and other specifications. This would help organizations quickly determine a model's appropriateness, making these measures easier and less cumbersome to adopt.

OPPORTUNITIES FOR OTHER POLICYMAKERS

☆ OPPORTUNITY 1

Clarify responsibilities for outputs of generative AI across the AI value chain stages, particularly for open source.

To enhance confidence in the deployment of generative AI and acknowledge the complex nature of fine-tuning and deployment cycles, it is essential to define role-based responsibilities within the value chain from FM developers to end-users. Pending reforms to the Data Use and Access Bill, as well as the drafting process of the ICO's recent Request for Information (RFI) on Generative AI (which was ongoing at the time of our research[5]), have resulted in some uncertainty for UK businesses, and questions remain regarding how specific aspects of the UK General Data Protection Regulations (UK GDPR) and the Data Protection Act (DPA) 2018 apply to the development and use of generative AI and foundation models. Leveraging existing cross-regulatory partnerships (with the ICO, OFCOM) could help to clarify responsibilities for model users as they develop and deploy models across different industries and contexts, particularly concerning any data protection requirements. Additionally, providing domain-specific guidance that includes real-world examples will help organizations navigate accountability effectively, fostering greater adoption of FMs, particularly open source.

☆ OPPORTUNITY 2

The Government should utilize existing efforts around AI assurance to take a cross-governmental approach to defining actors within the AI value chain.

We welcome DSIT's response to the AI Opportunities Action Plan, which commits to prioritise additional funding to support work designed to stimulate the AI assurance ecosystem[6].

The Department for Science, Innovation and Technology (DSIT) should use the AI Assurance Platform[7], which acts as a one-stop-shop for information on the actions businesses can take to identify and mitigate potential risks and harms from AI, to offer opportunities to take a cross-governmental approach to defining actors within a shared terminology. Alternatively, the proposed terminology tool for AI assurance could also include definitions of actors within the AI value chain. As part of such an effort to create a taxonomy of AI actors across the AI value chain, it will be important to consider international taxonomies, such as those of the United States National Institute of Standards and Technology (NIST), Partnership on AI (PAI), and the Organisation for Economic Co-operation and Development (OECD) to ensure that there is broad alignment and to avoid deepening confusion.

2.2 Access to resources is a challenge to development and use of FMs

Improved access to 'data, compute, expertise and funding' could accelerate the uptake and use of FMs.

While 42% of survey respondents feel that their organization currently has adequate access to essential AI resources— such as data, compute power, expertise, and funding— gaps remain, highlighting an opportunity for improvements to enable strong and sustained growth in the FM sector.

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2.2.1 Data

Participants highlighted the ability to develop bespoke product offerings as a key benefit of working with FMs. Being able to use their own data to fine-tune and optimize a model therefore enables companies to differentiate themselves from their competitors and serve a wider customer base. While sensitive data must be treated carefully inline with current data protection laws, our participants did find that there are use cases where this data can be valuable for further refining and enhancing model precision without compromising privacy, and can allow them to offer even more useful products and services which are tailored to their customers.

Data availability however poses a challenge for both FM developers and deployers, with roughly 80% of survey respondents considering data access an important factor in deciding whether to use and deploy FMs. Yet, only 1 in 3 survey respondents feel that current regulation, including data protection law, gives their business the confidence to use a variety of FMs in ways that comply with the law. Strict privacy regulations, especially those governing the use of first-party, third-party, or web data, could therefore reduce the variety and quality of models in the market. For example, tight restrictions have led to models being unavailable in certain regions. Regulatory constraints on personal data usage for model training and fine-tuning particularly limit data diversity, with only 36% of respondents feeling these restrictions have no impact on the marketplace. Despite the regulatory landscape, there is a sense among participants that accessing data on a large scale is inevitable. This sentiment is echoed by those who note GDPR's limited impact on the proliferation of cookies. While some respondents felt that the "ends justify the means" in accessing data for model development, respondents caution that care must be taken to avoid building systems that could compromise

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sensitive information, lead to unethical impacts, or unlawful use of personal data. Some participants therefore favored the use of open source models, as they were thought to offer greater flexibility, control and oversight, while some participants noted that in their experience closed models had more limited and prescribed transparency offerings around data practices.

Beyond regulatory compliance, participants highlighted the importance of embedding ethical values in data handling. Discussions underscored the complex balance of intellectual property protection and the need for transparency, noting that transparency requirements should align with the risk level and context of the application. For example, FMs used in high-stakes environments such as healthcare diagnostics should adhere to stricter transparency standards, given the potential implications for individuals' well-being. In contrast, lower-risk applications, such as entertainment recommendations, might require less rigorous transparency.

RECOMMENDATIONS FOR THE CMA

☆ RECOMMENDATION 2

Support improved access to the resources needed for development and deployment in the foundation model market.

The CMA should deepen use of existing initiatives, such as the DRCF's AI and Digital Hub and the new Regulatory Innovation Office to further improve resources for companies relating to AI usage and development and provide cross-sectoral regulatory steers with relevant regulators. Using these initiatives, which were created to curb the burden of red tape to enable organizations to innovate and grow, will provide the regulatory certainty needed to enhance the UK's competitiveness in the global market.

Regular, open channels of communication with regulators like the CMA are essential and we note the collaborative approach the CMA has already taken to devising the CMA AI principles. Participants recommended that companies share feedback on implementing regulatory principles within their specific industries, which could aid regulators in creating nuanced, domain-specific guidance. Roundtable discussions and "meet the market" events are also beneficial, helping to build awareness and encourage engagement with the CMA principles. Participants pointed to the FCA's effective rollout of consumer duty regulations, which gained traction through clear communication and funding support, as a model for amplifying the reach and impact of AI regulatory principles.

RECOMMENDATION 3

Encourage uptake of open source FMs to reduce barriers to entry and provide companies with greater control over data storage and handling.

> We welcome DSIT's response to the AI Opportunities Action Plan, which commits to Publish open-source solutions through a single "AI Knowledge Hub"[8].

The CMA should further encourage open source adoption as it can improve both risk management and competition by providing companies with greater control over data storage and handling. Open source models allow organizations to keep sensitive data within trusted boundaries, addressing data residency concerns and reducing risks associated with third-party APIs, which may transmit data across borders, as seen in some proprietary services. Open source solutions also mitigate the risks tied to sensitive data exposure, as firms retain complete control over data storage and processing, eliminating the need for extensive redaction processes. This approach not only strengthens data security but also fosters a more competitive environment by offering organizations flexible, transparent alternatives to closed source models.

Encouraging a more 'open source' development approach could also enable greater access in the FM market as it would ensure knowledge is not siloed within a few FM developers or deployers.

OPPORTUNITIES FOR OTHER POLICYMAKERS

☆ OPPORTUNITY 3

The Government and the ICO should encourage sandboxes and resource pooling initiatives to support data access.

> We welcome DSIT's response to the AI Opportunities Action Plan, which commits to unlock data assets in the public and private sector through various measures)[9] and work with regulators to implement pro-innovation initiatives like regulatory sandboxes[10].

The Government and other regulatory authorities, such as the ICO, should support improved data access for AI development through sandboxes and resource pooling initiatives. Sandboxes provide controlled environments where companies can safely test models on real data. Participants suggested that public entities, like the NHS, could create sandboxes using anonymized datasets— such as cancer-related data —to support healthcare startups and foster innovation towards solving significant challenges. Likewise, the BBC opening some sections of its media archives could create new opportunities for model training and experimentation.

Resource pooling offers another solution, allowing smaller organizations to form consortiums to share resources, including data, compute, expertise, and funding, similar to the collaborative practices of large model developers. Importantly, any such initiative would need to ensure that conduct does not infringe on existing legal frameworks relating to competition and information or resource sharing.

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2.2.2 Infrastructure

Infrastructure can pose a significant challenge to AI and systems development progress. Even if large models can be hosted and run, one expert pointed to the difficulty of sharing and accessing certain massive datasets which one may want to feed into the model (such as astronomy or particle-physics related datasets) without suitable infrastructure.

The UK's infrastructure for supporting FM development faces notable limitations at present. Low investment levels are expected to reduce the number of new companies entering the market[11], with many participants expressing only moderate confidence in the infrastructure currently supporting FMs.

The lack of data center infrastructure is a particular concern. In contrast to countries like Japan, the Republic of Korea and India, where governments are actively building data centers to support industry needs, the UK has not developed similar facilities. Current compute resources and funding are insufficient to meet growing industry demand. Recent funding cuts, such as the Government's decision to withdraw support for a £50 million supercomputer[12], mean that limited on-shore resources are available to the UK market for high-performance computing. This scarcity drives up the costs associated with model training and development, further constraining UK-based companies in their efforts to compete globally.

OPPORTUNITIES FOR OTHER POLICYMAKERS

☆ OPPORTUNITY 4

The Government should increase access to compute infrastructure for UK businesses.

> We welcome DSIT's response to the AI Opportunities Action Plan, which commits to publishing a long-term compute strategy in Spring 2025, producing a 10-year roadmap for compute, delivering a new supercomputing facility, and setting out its approach to international collaborations on compute[13].

To strengthen its FM ecosystem, the UK Government must increase access to compute infrastructure, addressing key limitations that hinder innovation and competitiveness. This could be done through initiatives like planning or energy reform, support for international data transfers, and Government investments. Current resource gaps discourage new companies from entering the market, and participants express only moderate confidence in the availability of AI resources such as data, compute power, and expertise. Addressing these deficiencies by investing in data center infrastructure and high-capacity compute systems would help reduce costs, support model development, and enable UK companies to better compete on a global scale. Investment in public compute initiatives, which support the access to compute resources for particular groups such as research bodies and public sector organizations, could provide another solution to support AI research and development.[14]

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2.2.3 Investment in, skills, tools and resources for research and development

Unlike the case for legal or financial services industries, less well funded industries do not yet benefit from the availability of tailored generative AI services for their needs as service developers focus on more profitable industries. As a result, public sector and charity sector organizations, for example, are more likely to focus on leveraging broadly applicable, reusable tools to gain the maximum impact from generative AI across the business, rather than developing bespoke solutions for their own use cases which would be expensive and requires a particular skill set.

One big influencing factor in this is that fine-tuning low-cost open source models can require specialized skill sets that are challenging for some organizations to source. Open source models, typically designed for developers, come with technical documentation that can be difficult for generalist teams to interpret. Skilled developers are in high demand, with many learning on the job, and public sector organizations struggle to attract this talent due to lower salaries compared to the private sector. In sectors like financial services, where teams may comprise thousands of data scientists, there is a clear advantage. However, in resource-constrained environments, organizations often rely on external consultants or suppliers to bridge skill gaps. Survey responses reflect these challenges, with open source models seen as more "challenging" to staff and integrate (3.2) compared to closed source options (2.9).

On the regulatory side, organizations need dedicated resources to navigate AI compliance, as understanding and applying regulations demands both expertise and funding. For instance, some organizations have created dedicated AI focus groups that include non-technical members to ensure a well-rounded perspective on regulatory escalation points. However, assembling and maintaining such regulatory teams is costly, underscoring a need for accessible, standardized resources in AI regulatory education to support organizations in safely deploying FM models.

Education is essential to improving access to generative AI, as technical understanding is crucial for effective control and deployment. While transparency and open data are valuable, participants emphasized that organizations still require internal technical expertise to manage AI systems responsibly. However, many organizations lack the resources or infrastructure to support upskilling, relying on external knowledge sources, which introduces security risks. Participants also highlighted the role of international competition on the availability of an AI-trained workforce in the UK. While broad-based, country-wide upskilling initiatives were highlighted as necessary to empower employees across sectors, participants also emphasized the need for a nationally devised talent development pipeline in which skills, qualifications and salaries are benchmarked against international recruitment practices in the AI field and focused on broader international competitiveness of the UK FM market. This would help in preventing brain drain to countries with more competitive salaries.

OPPORTUNITIES FOR OTHER POLICYMAKERS

☆ OPPORTUNITY 5

The Government should support training and skills development as well as access to dedicated research and development resources to drive innovation and competition.

> We welcome DSIT's response to the AI Opportunities Action Plan, in which they commit to take forward the recommendations designed to attract and support top talent and ensure the UK continues to train world-class AI experts[15], as well as to fund regulators to scale up their AI capabilities and their commitment to creating a national data library for researchers and developers to utilize[16].

There is competition for AI talent and skills both among companies who are seeking to develop AI solutions and among the Government and regulators who are often disadvantaged by being able to offer limited pay in comparison to larger private sector organizations. The Government should therefore set-up a task force to explore ways in which the playing field can be leveled for both Governmental and non-Governmental organizations with limited resources, such as non-profit organizations.

Educational programs and Government-backed research funding could play a critical role in supporting generative AI adoption across industries. Participants highlighted the need for initiatives that build essential skills, such as prompt engineering and model explainability, both through formal educational facilities (school curricula, university programs, PhD placements) and through work-focused, accessible training modules. The Government could play a valuable role here by coordinating educational outreach, offering resources for SMEs, and helping consumers navigate generative AI adoption effectively. By fostering technical skills and guiding responsible practices, these programs would create a more prepared and knowledgeable AI ecosystem.

To boost competition in AI, the UK could also benefit from incentivizing international talent and increasing support for startups. Currently, countries like the US attract top talent through targeted visa programs, while other regions, like the Middle East, offer rapid AI-specific visas within 48 hours. A dedicated tech visa scheme in the UK could help draw skilled AI professionals, supported by reliably harmonized standards for educational qualifications and developer certifications to streamline hiring globally.

2.3 Partnerships, mergers and acquisitions provide paths to innovation and growth, but concerns from the regulator must be clarified

More guidance on the role and structure of partnerships could incentivize innovation in FMs.

Survey results show a strong desire for diversity in FMs, with 100% of respondents agreeing that it is important to have a range of models to meet differing business needs. Additionally, 100% appreciate having a variety of deployment options, such as in-house development, APIs, and plug-ins. This reflects the participant view that a market with more choice of FMs and more specializations is seen as one that will produce more performant models and price competitiveness. Survey findings show that the diversity of open source models (4.0) currently exceeds that of closed source models (3.5). Partnerships, mergers and acquisitions are all seen as valid pathways to obtaining access to a diverse range of models and deployments options.

In this context, participants noted that strategic partnerships can have a range of effects on competition, depending on the specifics, and that tight restrictions on the competitive advantage of first movers and collaboration between companies might disincentivize innovation and slow technological progress. Therefore, guidance is needed on how to effectively implement the current sub-principle point under the "Diversity" principle: "Powerful partnerships and integrated firms do not reduce others' ability to compete", so as to provide more certainty for organizations who are seeking to innovate, diversify and grow through partnerships and or M&A activity.

RECOMMENDATIONS FOR THE CMA

☆ RECOMMENDATION 4

Advising on what to avoid in partnerships, mergers and acquisitions would be beneficial to supporting market diversity.

The CMA should share more detail on what they are concerned about in the structuring of partnerships, and should work to expedite partnership reviews given the fast moving nature of AI markets. We note that any information sharing or joint efforts must comply with the applicable law, including the Competition Act (1998), Enterprise Act (2002), and Digital Markets, Competition and Consumers Act. For SMEs, navigating these restrictions can be challenging, while partnerships with larger organizations could enable them to develop specialized products and expand their market presence. This could be particularly important for SMEs in resource-limited sectors, like public services and charities. Clear advice could empower SMEs to participate in Government-supported collaborations without risking regulatory infringements.
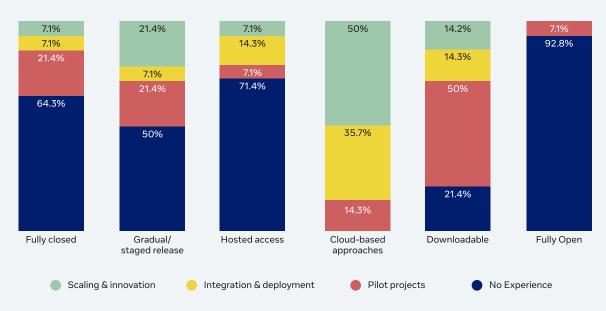
In terms of merger controls, we note that the CMA has recently made strides to further rationalize their approach to ensure proportionality — including raising the de minimis thresholds from £15m to £30m — and has committed to redouble their efforts to provide greater clarity on jurisdiction and hear feedback from industry on this area.[17]

2.4 Open source models, tools and components support choice and flexibility

Open source models and tools offer flexibility and enable lower cost development of products through boosting choice and diversity among AI FMs.

Survey findings reveal that open source models generally offer more adaptability for integration and model optimization across diverse systems and datasets, scoring higher in perceived ease of development (4.1) than closed source models (3.6). Closed source models are also more likely to foster vendor dependency (3.2), with limited customization options and more significant challenges when switching providers.

However, participants reported a gap in regulatory clarity that leaves organizations wary of their responsibility for managing risks, particularly when using open source models and with regard to the storage, handling and processing of data for fine-tuning. Participants cited complex regulatory development requirements as key barriers to the use of open source FMs, and while there was a strong interest in using FM models, adoption remains limited. Despite favorable perceptions around security and data privacy—where open source models scored slightly higher (4.3) than closed source models (4.2)—only 7% of respondents reported experience with fully open models, and participants in particular noted the complexity of trying to resolve cloud-hosting restrictions and requirements with model development needs.

Reported experience levels with models and release strategies

	Scaling & innovation	Integration & deployment	Pilot projects	No Experience
Fully closed	7.1%	7.1%	21.4%	64.3%
Gradual/staged release	21.4%	7.1%	21.4%	50%
Hosted access	7.1%	14.3%	7.1%	71.4%
Cloud-based approaches	50%	35.7%	14.3%	—
Downloadable	14.2%	14.3%	50%	21.4%
Fully Open	—	—	7.1%	92.8%

● Scaling & innovation   ● Integration & deployment   ● Pilot projects   ● No Experience

RECOMMENDATIONS FOR THE CMA

☆ **RECOMMENDATION 5**

Encourage harmonized practices for cloud-hosting of models and facilitating the movement of data and models between cloud providers.

The CMA should encourage harmonized approaches and alignment with regard to cloud hosting services so that data and models can be easily transferred between hosting services. Harmonization can play a key part in developing a coherent approach and reducing friction for developers and fine-tuners who want enhanced choice and diversity of hosting and model options.

Participants emphasized that these guidelines should be developed and maintained by a neutral industry body.

OPPORTUNITIES FOR OTHER POLICYMAKERS

☆ **OPPORTUNITY 6**

Support the development and deployment of open source AI through future AI legislation.

Future legislation should support — both in sentiment and in the provision of mechanisms for practical assistance — the development of open source AI in the UK, as it has an important role to play in facilitating interoperability in the FM market, and generally offers more adaptability for integration across diverse systems and datasets. Moreover, given the potential of open source AI to drive innovation and growth across various sectors, it is crucial that regulators provide support for its development and deployment.
This collaborative approach will not only foster a conducive environment for open source AI to support a competitive ecosystem but also ensure that its benefits are equitably distributed across society.

Findings & Recommendations on the CMA AI Principles
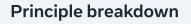
3

GEN AI

The CMA developed the AI principles in response to the market conditions and landscape we described in the previous chapter. This chapter presents specific findings on the CMA AI principles and their clarity, actionability and perceived efficacy, as well as potential recommendations to further improve the principles, and ensure that they achieve the desired outcome of mitigating risks to fair, open and effective competition in the UK's FM model market.

We defined the key three testing dimensions as follows:

- Clarity: The principle is written in plain language and easy to understand.
- Actionability: It is possible to "align business practices" with this principle.
- Efficacy: The principle, if encouraged or enforced, will deliver the intended policy outcome.

The below sections will cover findings on the efficacy, clarity, and actionability of the CMA AI principles in more detail, as well as some broader reflections on their use and role in the market.

Principle breakdown

Access	Efficacy	57.1%
	Clarity	57.1%
	Actionable	14.3%
Diversity	Efficacy	85.7%
	Clarity	100%
	Actionable	64.3%
Choice	Efficacy	85.7%
	Clarity	92.9%
	Actionable	42.9%
Fair dealing	Efficacy	50%
	Clarity	100%
	Actionable	28.6%
Transparency	Efficacy	71.4%
	Clarity	92.9%
	Actionable	57.1%
Accountability	Efficacy	71.4%
	Clarity	92.9%
	Actionable	64.3%

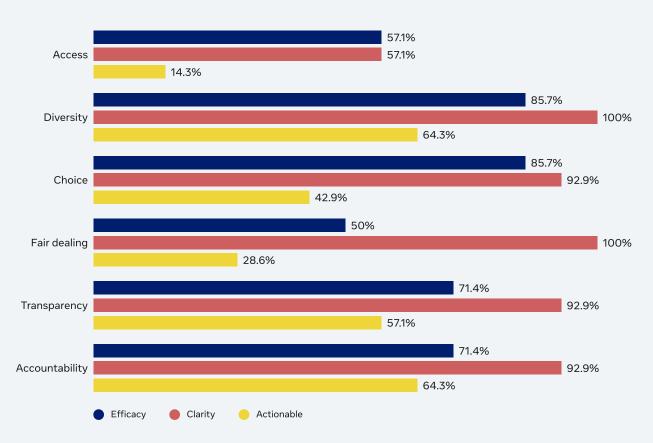● Efficacy   ● Clarity   ● Actionable

Figure: Proportion of respondents who agreed that the principle is clear (red), actionable (yellow) or effective (blue).

3.1 Scope to raise awareness and enhance the efficacy of the principles

Open source models and tools offer flexibility and enable lower cost development of products through boosting choice and diversity among AI FMs.

At the start of the program, only 43% reported being "somewhat familiar" with the principles, and none indicated a high level of familiarity. A small group (21%) expressed general familiarity, while 36% had little to no knowledge of them. Raising awareness of the principles and encouraging businesses to engage with them may further enhance their efficacy as organizations become collaborators with the CMA in refining and aligning with the principles. Having UK organizations understand that the CMA has articulated what a well-functioning AI FM market looks like through these principles will empower them to contribute to the creation and maintenance of that market.

Separately, participants highlighted the absence of specific references to climate and sustainability, which some believed was a gap in the principles. Since the principles are intended to guide the FM market to positive outcomes for consumer protection, some participants believed sustainability should be specifically addressed within the principles or as an additional principle. This would align with the CMA's Annual Plan of 2024/2025, which set a medium-term priority to accelerate the UK's transition to a net zero economy[18].

⭐ RECOMMENDATION 6

Focus on ensuring that organizations throughout the UK are aware of the AI principles and that feedback and engagement are sustained.

With the AI principles the CMA have created a simple "blueprint" for what a fair and robust AI foundation model market could look like for the UK. This blueprint can be a resource to engage companies not just to align their practices with the principles, but also to be "custodians" of them as active participants in creating a culture of growth, innovation and fair competition in the UK which drives technological break-throughs and enhances the UK's standing as a global leader in the AI space.

In order to ensure that companies feel empowered by this mission, aligned with the goals of the CMA, and aware of how the CMA can support them in driving their own growth and that of the UK economy, engagement with industry around the principles and what they mean for UK businesses should be ramped-up and sustained over time.

3.2 Ambiguity within and between principles remains

The principles could be clearer, particularly in terms of breakdown and naming.

Participants pointed out that the principles lacked clarity, particularly in terms of their breakdown and naming. They noted that some principles overlapped, highlighting similarities between "Diversity" and "Choice". The language used in these two principles was similar, with phrases like "a variety of models available to choose from" (Diversity) and "sufficient choice for businesses to decide how to use FMs" (Choice)[19]. This led to respondents often using "Choice" to cover concepts that were actually part of the "Diversity" principle. To address this confusion, it may be helpful to rename the current "Choice" principle to focus on its primary concern, which is interoperability of models.

Another area of overlap flagged was between "Access" and "Transparency", as transparency was seen as critical to enabling broad access to the necessary inputs for FM developers and to continue 'effective challenge to early movers from new entrants'[20]. We note however that the CMA has extensively set out their reasoning for separating the principles out in this way, as well as awareness of the fact that some principles are intrinsically linked (e.g. Choice and Diversity)[21]. However, based on feedback from the participants, it is evident that a clearer description or confirmation on their mutual dependency within the description of the principles would be useful for clarity.

Open Source FMs

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As part of the CMA's "Diversity" principle , open source models were highlighted as being able to reduce barriers to entry and expansion. As part of the Technical Update Report[22], the CMA furthermore provided a diagram to illustrate the gradient of ways in which models can be released.

Participants showed varied interpretations of "open" and "closed" source, with some referring to a three-tiered framework: "fully open," with access to model weights, code, and datasets; "open weights," where only inference code is accessible; and "fully closed," which restricts all access. Others took a less rigid view, defining "open source" based on its downloadability, visibility of model weights, and flexibility to adjust internal structures. They noted that open models provide benefits like fine-tuning for accuracy and the ability to optimize for greater efficiency, visibility into the model's operations, and adaptability in how a model interacts with users. In contrast, closed models were seen as easier to deploy but often limited to API access, obscuring both model data and performance details.

The majority of participants favored a multi-dimensional spectrum approach to openness, as it acknowledges the degrees of access, transparency, customizability, and other factors relevant to a model's usability. The openness diagram provided by the CMA as part of the Technical Update report[23], while useful, was critiqued for relying on technical language that could alienate non-expert users, and for not fully reflecting real-world access limitations.

☆ RECOMMENDATION 7

Provide further clarity on the definitions of the principles through a glossary or a more comprehensive description.

The CMA should enhance the AI principles by clarifying overlaps and interdependencies between "Diversity" and "Choice". Participants suggested an accompanying glossary to the CMA AI principles could be helpful to convey these clarifications. Such a glossary could also offer an expanded "spectrum of openness" which should be updated with the latest models, enabling organizations to develop a more nuanced and detailed understanding of what models are available and what functionality and flexibility is offered by each. This may assist them in making more informed choices with respect to the "Choice" and "Diversity" principles.

Moreover, further clarity is needed on how the principles do (or do not) relate to the CMA's ambition to promote environmental sustainability and help the UK reach its Net Zero ambition. For example, linking the principles to the 'Green Agreements Guidance'[24] could support businesses to achieve more environmentally sustainable outcomes, an area that many participants felt was underrepresented and increasingly important, particularly given ESG goals within industries. Potentially this is an area where the CMA could work with DSIT as they develop their proposal for how the UK will address sustainability challenges as the country develops its AI infrastructure (as committed to by the UK Government in their response to the AI Opportunities Action Plan[25]), to ensure that there is no conflict or contradiction between the documents.

3.3 Organizations unsure how to action or "align with" principles

The principles are perceived to vary in practicality and their application across the AI value chain could also be clarified.

While the CMA AI principles are by nature high-level, the CMA asks companies to "align" their practices with the principles. In fact, in the Technical Update Report, the CMA notes that stakeholder engagement around the principles leading up to the report publication had focused on whether the principles "have been reflected in companies' actions"[26]. This section will therefore talk about "actionability", by which we are referring to participants' perceived ability to align their business practices with the principles.

Survey data showed that, although most principles are viewed as clear, they vary markedly in practicality. For example, only 14% of respondents agreed that "Access" was actionable; and "Fair Dealing" also rated low in terms of actionability (28%) for participants. Participants emphasized that aligning with the principles is more challenging than understanding them, underscoring the need for more clearly defined guidance containing examples and practical steps to facilitate alignment. One key aspect of this is defining the thresholds associated with the successful implementation of each principle: participants were unclear on what constitutes 'enough' transparency or access, for example, to drive good market outcomes for competition and consumers.

Further, as also noted by the CMA in their Technical Update Report[27] participants called for clearer guidance on how each principle applies across different roles in the AI value chain—such as FM developers, deployers, and end-users. The EU AI Act[28] was referenced by some as a useful example that considers AI value chain roles in the context of assigning responsibilities and tasks. In particular, participants expressed confusion around the intended AI actor for the 'Access' principle, or put another way, which actors within the AI value chain should reasonably expect to be aligning their practices — or trying to align them — with this principle.

In addition to the need for more practical guidance on how to align their activities with the principles, some participants also felt that market or sector-specific guidance is needed to understand how to enact the principles. For example, one participant shared that they currently rely on peers in the same sector for advice around how they should approach partnerships and integrations with commercial services and vendors in the foundation model market, and that they would find benefit from having the CMA produce an additional "profile" which would address specific sector-based alignment opportunities and would take into account the any unique considerations for each major sector. These findings are also reflected in a recent report from the Ada Lovelace Institute, which found that local government procurers of AI technologies face barriers like unclear guidance and legislation, and data challenges[29].

There was strong sentiment that actionability requires both more specific guidance and enforcement, especially around transparency and interoperability. Participants reflected that the UK has fostered robust dialogue around responsible AI, but action to enforce principles or clarification on how the CMA intends to use the principles as part of their toolkit and with regard to enforcement actions is needed to further clarify how UK businesses should align with the principles. Legislative developments internationally such as the DMA[30] and the establishment of the UK's Digital Markets Unit, are expected to drive greater awareness and action towards meeting the requirements set out by Competition authorities, including the CMA AI principles.

However, respondents also cautioned against unintended consequences, with many citing increased compliance costs impacting smaller companies disproportionately and limiting competitive advantages. The increased overhead which has resulted from the passing of the EU AI Act was also cited as a cautionary example, suggesting that while principles are essential, enforcement should avoid excessive burdens that could stall AI innovation.

RECOMMENDATIONS FOR THE CMA

RECOMMENDATION 8

Produce flexible, iterative guidance to connect high-level principles with sector-specific implementation, linking to the CMA's prioritization and toolkit.

To support practical implementation, the CMA should provide role-specific guidance that maps the principles to different stages within the AI value chain. Some organizations — for example, Partnership on AI — have recently developed conceptual frameworks for AI value chain actors. The CMA could consider integrating an existing framework such as this into the AI principles, creating a mental model for organizations to understand which principles are most relevant to their specific role in the value chain.

While experts understood that as a competition authority, rather than a sector regulator, the CMA cannot be overly prescriptive, it was suggested that the CMA should develop guidance to connect the CMA AI principles with both their intended prioritization, as well as their tool selection in exercising their powers.

Moreover, ensuring that these guidelines provide clarity on how the principles apply to different sectors can help to ensure the principles are relevant across varied contexts. Participants mentioned the Senior Managers and Certification Regime[31] and Consumer Duty[32] regulatory frameworks as an effective example of industry-specific guidance.

To support AI's rapid evolution, the CMA should take a flexible, iterative approach to developing further guidance. Together, these approaches would provide UK businesses with the short-term flexibility and long-term regulatory certainty that participants highlighted is essential for them to be able to innovate and compete.

☆ OPPORTUNITY 7   47

The Government should increase access to compute infrastructure for UK businesses.

> We welcome DSIT's response to the AI Opportunities Action Plan, which commits to empower the Regulatory Innovation Office to drive regulatory innovation for technologies and innovations through behavioural changes within regulators, as well as to request regulators to publicly report on their activities to promote AI innovation[33].

While we recognize the CMA AI principles as a product of the CMA, both they and other regulators should further cooperate to ensure that there is absolute clarity as to which aspects of the CMA AI principles and corresponding AI regulation are within each organizations' remit, and what the guidance is in nuanced and complex areas such as data access for model training and fine-tuning.

Furthermore, the CMA and other UK-based authorities should recognise the global nature of this challenge of providing regulatory clarity to support competition in AI FMs and continue to capitalize on opportunities to collaborate globally. This can be done through existing initiatives like the OECD.

Conclusion

The Open Loop UK program focused on the operation of the UK FM market, analyzing opportunities and challenges around the CMA AI principles as a tool to guide the development and deployment of FMs to positive outcomes for competition and consumer protection.

As we conclude this report, it is clear that there are great opportunities for the UK FM market to thrive, with UK businesses emphasizing their willingness to align their business practices with the principles to foster innovation and healthy competition across the AI value chain. It is important to acknowledge that the CMA has made significant strides to address perceived challenges through changes made in the Technical Update Report and significant outreach activity with industry. A pioneer amongst other competition authorities, the CMA's AI principles provide a strong foundation for achieving optimal outcomes for consumers and businesses, but they can only be fully realized through ongoing collaboration and engagement with a broad range of stakeholders. By fostering partnerships with other government bodies, industry leaders, and international organizations, the CMA can ensure that these principles not only guide but also inspire the development of AI technologies that are both competitive and responsible.

The path forward is one of collaboration, regulatory clarity, and commitment from industry and Government agencies alike to the implementation of both the AI Action Plan and subsequent proposals from the CMA. By working together, the CMA and its partners can create an environment where AI technologies flourish, benefiting businesses, consumers, and society as a whole. This collaborative spirit will be essential in navigating the challenges and opportunities that lie ahead, ensuring that the UK remains at the forefront of AI innovation and governance.

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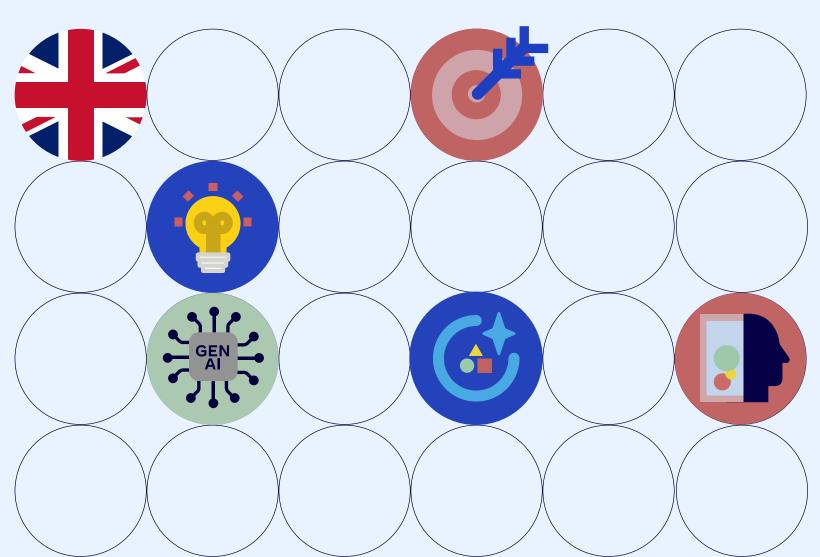   Response, Recommendation 26.
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Open Loop UK: Competition in AI Foundation Models and the CMA AI Principles

Annex

CMA's AI Principles

Below are the CMA's AI Principles that were tested with the Open Loop UK's company cohort for the purpose of this report

Figure 31 – The CMA's AI principles

ACCESS *Ongoing ready access inputs*	• Access to AI data, compute, expertise and funding without undue restrictions • Continuing effective challenge to early movers from new entrants • Successful FM developers do not gain an entrenched and • disproportionate advantage by being the first to develop a FM, having economies of scale or benefitting from feedback loops • Powerful partnerships and integrated firms do not reduce others' ability to compete
DIVERSITY *Sustained diversity of business models and model types*	• There are a variety of models available for businesses and consumers to choose from that suit their needs, whether that be for a general purpose or a highly specialised task • Open-source models can help reduce barriers to entry and expansion • Both open and closed source models push the frontier of new capabilities • The market sustains a range of business models • Powerful partnerships and integrated firms do not reduce others' ability to compete
CHOICE *Sufficient choice for businesses and consumers so they can decide how to use FMs*	• A range of deployment options, including in-house FM development, partnerships, APIs or plug-ins • Consumers and businesses can switch and/or use multiple services and are not locked into one provider or ecosystem • Services are interoperable and consumers and businesses can easily extract and port their data between services • Powerful partnerships and integrated firms do not reduce others' ability to compete
FAIR DEALING *No anti-competitive conduct*	• Confidence that the best products and services will win out, and that firms are playing by the rules • No anti-competitive conduct, including anti-competitive self-preferencing, tying or bundling • Vertical integration and partnerships are not used to insulate firms from competition • Competition can counteract any data feedback or first mover effects
TRANSPARENCY *Consumers and businesses have the right information about the risks and limitations of FMs*	• People and businesses are informed of FMs' use and limitations • Developers give deployers the right information to allow them to manage their responsibilities to consumers • Deployers provide the right information to users of FM-based services to allow them to make informed choices, including being clear when an FM-based service is being used
ACCOUNTABILITY *FM developers and deployers are accountable for FM outputs*	• All firms take responsibility for ensuring they help foster the development of a competitive market that gains the trust and confidence of consumers and businesses • Developers and deployers take responsibility for what they control in the value chain and take positive action necessary to ensure consumers are adequately protected. • This includes the provision of sufficient transparency to enable others in the value chain to remain accountable and protect consumers

Methodology

Research hypotheses

The Open Loop UK program provides insights into the current state of competition in the FM market, highlighting challenges and opportunities for improvement, as well as the ability of the CMA's AI principles to address these challenges. While acknowledging limitations, these findings lay the groundwork for future research, policy development, and the continued advancement of generative AI development.

Program outcomes

1. Insight into the current use and deployment of AI FMs and how AI value can be best realized across intersecting policies.

2. A forum for the discussion of opportunities and challenges to fair competition and exchange of best practices among organizations.

3. Analysis of the CMA AI principles and targeted recommendations from organizations to inform future iterations or implementation.

Methodology

Step 1 — Intake Discussions

The Open Loop UK Program brought together a cohort of 14 companies, representing a diverse cross-section of the UK's AI landscape, including both B2B and B2C firms from highly regulated industries, lower-margin sectors, public entities, and SMEs. The cohort spanned from a range of industries, including Banking & Finance, Health & Pharma, Insurance, Media, Social enterprises etc. Participants included leads from strategy, legal, and product teams, each bringing unique expertise in implementing generative AI in the UK regulatory context.

Step 2 — Surveys

Participating companies were invited to complete a structured survey focused on the implementation of CMA AI principles. The survey was directed to FM leads within these organizations, whether from strategy, legal, or product teams. The first stage of the research involved a 20-question survey completed by the designated lead with support from internal experts as needed. This quantitative approach enabled statistical analysis and data visualization, with findings integrated into the final report.

Step 3 — Interviews

A series of 60-minute qualitative interviews was conducted with selected representatives from each participating company, providing an in-depth exploration of their survey responses. Prior to each interview, participants received a confirmation email containing their initial survey responses, a context-setting cover sheet, an outline of question topics, and a notice of call recording. During the interview, researchers delved into specific survey responses, prioritizing areas for deeper discussion to gain nuanced insights into each company's approach to FM implementation and CMA AI principles. This qualitative approach allowed for a thorough understanding of individual company perspectives, complementing the quantitative data gathered from the survey.

Step 4 — Workshops

The first expert group workshop focused on discussing recent AI policy debates related to FM usage and deployment, particularly around potential barriers faced by downstream companies. Experts were also briefed on the program's initial research approach and invited to share insights and perspectives on emerging research topics.

The second expert group workshop focused on the early findings and recommendations for the final report. Experts were invited to share their thoughts on the appropriateness and effectiveness of the recommendations, potential gaps, and any additional insights for the report's findings. This feedback was further incorporated into the final report.

An in-person roundtable event, hosted at the Royal Society in London, brought together the program's company cohort, expert group, and representatives from the CMA and other Government agencies. The roundtable served as an opportunity for the cohort to meet in person and familiarize themselves with the Open Loop team, receive first-hand engagement with the CMA and collaboratively explore the best ways to apply the CMA AI principles to the development and use of AI FMs in the UK in a way which fosters innovation, fairness, and better outcomes for businesses and consumers. The rich insights from this workshop were further incorporated into the final report.

Limitations

The combination of surveys, in-depth interviews, and expert workshops used in this study is well-aligned with its objectives, though certain methodological limitations should be acknowledged when interpreting results.

Self-reported data

Relying on self-reported information from company representatives introduces potential biases, as responses may be influenced by differing interpretations or a tendency to present practices positively.

Sample scope and industry representation

Although the study engages a range of companies across sectors, the modest sample size (14 companies) may not fully reflect the spectrum of practices and experiences in the broader industry, especially within emerging or specialized sectors.

Temporal constraints

Data collection took place from September to October 2024, capturing a specific period. As AI practices and regulatory responses shift, some findings may change in relevance over time.

These factors suggest a need for careful consideration when examining results. By integrating data from multiple methods, this study aims to reduce biases and enhance insight depth. Although not universally representative, the findings offer meaningful trends and insights from participating organizations, with future research well-positioned to expand and update these observations as AI practices evolve.

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