

American Bar Association Antitrust Section – Spring Meeting

Artificial Intelligence as a Target and Tool

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Check against delivery

It is a great pleasure to be here today to discuss the recent burst of innovation in artificial intelligence which at the very least captured our imagination, as its potential seems boundless.

It is still **difficult at this stage to fully assess competition in AI** and, particularly, what will be the landscape in the future.

Many technologies are still experimental, and firms are exploring business models.

However, based on recent developments and on what we have learned from digital markets, we can already have **some pointers on what to expect**.

And this is precisely what the AdC has done in its Issues Paper published in November last year¹, on **competition and generative AI**.

Let me share some of our conclusions with you.

What is generative AI and why is it disruptive?

What is unique about generative AI is that, from a simple prompt, it produces new content, in a similar way as a human, but **much faster** and at a **lower cost**.

As such, AI is set to become widely adopted across many sectors and may drive **significant productivity gains**.

It reminds us of the **shift from the artisan workshop to the mechanized factory**, during the industrial revolution, but applied to human intelligence rather than craftsmanship.

Of course, at the moment, because the sector is so new, its **potential is unrealized**, meaning that there are still **many opportunities for innovation**.

For example, it is likely that the performance of models can still be improved, the costs of developing and running AI models could be lower and there are many applications and business models yet to be explored.

To fully realise the potential of AI, **it is crucial to maintain proper incentives to compete on the merits and to innovate**.

Key inputs for generative AI and how they can affect competition

But for developing a generative AI model with good performance and a low cost requires access to key inputs, namely computing power, data and know-how, and many competition concerns may arise. Let me quickly go through these.

¹ See [“AdC warns of competition risks in the Generative Artificial Intelligence sector”](#), 05.11.2023.

Computing power and access to the cloud

First, **AI models are hungry for computing power.**

This may be very costly and requires either **cloud computing** services or a vast **in-house infrastructure.**

The fact that some of the major players in cloud computing are also invested, via partnerships with generative AI developers, in the race to AI, signals the importance of cloud computing for AI development.

Thus, **access to cloud computing and to GPU markets** is likely a key determinant of competition in AI. And both these sectors – cloud computing and graphics processing units (GPU) - are **highly concentrated**, which may raise competition concerns and may adversely impact on innovation.

Data, access to data and experimentation

Second, access to data will likely be an unavoidable topic of discussion regarding competition and AI.

Developing base models **requires large volumes of high-quality training data.**

These are the examples from which the model learns. Many popular models use, at least in part, **public training data.**

However, we cannot extrapolate this to the future.

Developers are now less forthcoming about disclosing what data they use, and it is very likely private data may become increasingly more important in the future. This is both a way to avoid intellectual property concerns but also to differentiate from the competition.

Developers may also collect monitoring data on their own models. This includes data on how the models are developed, how they run and how they are used.

This **monitoring data is an integral part of the experimentation** necessary to optimize the cost and performance of AI models.

Monitoring data is mostly private and may be the source of **learning and network effects** favouring **first-movers** and **incumbents.**

As such, **access to data is going to be a key topic** in Generative AI. A developer may, for example, hold access to better datasets that others cannot replicate because it is also present in a digital market where it is easy to collect that data. This data can be used exclusively by in the training of its AI models.

Access to know-how

Third, access to know-how.

Innovation will largely hinge on experimentation by AI developers, aimed at optimising the training and the performance of the models. This requires **access to specialised workforce which may be scarce.**

Innovation will thus need a **competitive labour market for professionals specialised in generative AI**, which includes ensuring that companies do not seek anticompetitive ways to retain experts, such as no-poach agreements.

Competition within generative AI ecosystems

Having discussed the inputs to develop a generative AI model with good performance at a low cost, we can now move downstream.

A possible **future development** are **ecosystems of generative AI**.

Foundation models are at the heart of generative AI. They are general and can then be further adapted and tweaked to specific tasks downstream.

So, different AI services built from the same foundation model may coexist.

For example, a large language model can be used to create custom chatbots. But it can also be adapted to extract consumer or financial data from large unstructured datasets, creating many different end-user applications on top of a foundation model.

This brings us to the final antitrust implication that I will highlight.

Just like there is an ecosystem of applications around an operating system, there could be an **ecosystem custom models and plugins around a foundation model**.

In such ecosystems, the **developer of the foundation model is king** and may want to use its position to **thwart competition downstream**.

For example, a developer may have the incentive and the ability to give its own downstream AI services privileged access to its foundation model. This would include, for instance, giving access to the largest, the most efficient or the most updated model.

So, in theory, everyone could develop a competing model or an “app for AI” based on the same foundation model, but, in practice, only one exists.

AI as an enforcement tool

Regarding the use of AI as a tool, the innovation brought by AI may help competition authorities worldwide in several ways.

AI and machine learning tools may be used by enforcers to optimize screening tools that help them to detect collusive activities.

Competition authorities have long used behavioural screens to detect potential collusion in public procurement data.

By identifying, in public procurement databases, behaviour that seems consistent with collusion, authorities across several jurisdictions have been able to open investigations and sanction firms responsible for bid-rigging behaviour.

AI and machine learning may help us to further enhance this process, by **increasing both the quality of the data, and the models that are used to detect these patterns**.

More generally, AI models may be used to improve the models itself, and **help to detect collusion in public procurement databases, or through web scraping of online prices**.

Algorithms and AI may also **improve the efficiency and effectiveness of investigations** in other ways. For example, helping with the review of merger documents.

At the **AdC** we are focused on strengthening our toolbox to promote competition and facilitate the detection of anticompetitive behavior in digital markets. Artificial Intelligence is one of the technologies we may use for this purpose.

We use **screening tools** to identify collusive behavior between companies in public procurement. These tools may benefit from AI models to determine whether the tools are effective (i.e. quality control).

We also use **web scraping techniques**, collecting online data to monitor prices charged by online sellers and identify signs of price fixing. In this context, we can train AI models based on the data obtained, improving the results accuracy.

The importance to keep up to date with these developments is recognized by antitrust agencies worldwide.

The Directorate General for Competition from the **European Commission** has been increasing its specialized staff and is looking to appoint its first **Chief Technology Officer**, who will guide and oversee data-related and digital projects and workstreams and should assure that the European Commission is at the forefront to pursue digital investigations, including in AI².

Last month, in the context of a meeting of technologists of the **International Competition Network (ICN)**, more than 20 agencies – including the AdC - issued a **joint statement recognizing the importance of increasing their technical capacity and expertise**, including in AI³.

I can also mention other examples of agencies using AI:

- In **Spain**, since some of the public procurement information is available in text form, the antitrust agency (CNMC), through Natural Language Processing, has developed **several mechanisms to make it easier to analyse this information**, including a search engine, and a Name Entity Recognition Algorithm⁴.
- The **UK** antitrust agency (CMA) has developed tools to **speed up the review of documents in its merger assessments**, in which it may receive from the parties millions of documents. These tools include algorithms that provide insight and filter the most relevant documents for human review⁵.

We can also mention a few examples of implementation of AI by other organizations, which are not limited to antitrust enforcement.

² See [Optimal Design, Organisation and Powers of Competition Authorities – Note by the European Union](#), OECD, 27.11.2023.

³ See [Technologist Forum statement on building agency digital capacity](#)

⁴ See [Data Screening Tools for Competition Investigations – Note by Spain](#), OECD, 28.11.2022, §56-62.

⁵ See [The technology-led transformation of competition and consumer agencies: the CMA's experience](#), Stefan Hunt, 14.06.2022, pages 24 and 25.

In January this year, the European Commission also created a **European Artificial Intelligence Office**. The Office will issue guidance and is meant to be the centre of AI expertise across the EU. It is not specifically related to antitrust enforcement, but it will play a key role in implementing the EU AI Act and foster the development and use of trustworthy AI, and international cooperation.⁶

In addition, the EU judiciary is also keen on making use of the potential of AI.

In 2023, the **European Court of Justice** (ECJ) published its **Artificial Intelligence Strategy**⁷. This document discusses some of the AI tools that the court has so far tested to improve its efficiency, such as **tools to facilitate hearing transcripts and prepare automated summaries of documents**. It also outlines the next steps for the ECJ to move from the current “experimentation” phase to a more widespread “industrialisation” phase of AI usage.

Seizing the moment of innovation: the role of competition policy

To conclude, and returning to my initial idea, generative AI has the **potential to create new markets and disrupt existing ones**.

However, it also seems to be a poster child for all the challenges digital markets pose to competition.

Competition enforcers must thus remain vigilant and active to keep the pace of innovation. The sector is new, so it is important that competition is right from the get-go to the benefit of consumers and the economy.

Some determinants that are likely to be key to effective competition in generative AI and these relate to access to **data, access to cloud computing or hardware, and access to foundation models**.

In this context, it is particularly important that competition enforcers and all different stakeholders keep on sharing their experiences within this sector.

⁶ <https://digital-strategy.ec.europa.eu/en/policies/ai-office>

⁷ See [Artificial Intelligence Strategy](#), Court of Justice of the European Union.