

ARTICLE

**Harnessing the transformative benefits of AI to
maximize competition, innovation and
competitiveness**

Nocholas Banasevic

The Network Law Review is pleased to present you with a special issue curated by the Dynamic Competition Initiative (“DCI”). Co-sponsored by UC Berkeley and the EUI, the DCI seeks to develop and advance innovation-based dynamic competition theories, tools, and policy processes adapted to the nature and pace of innovation in the 21st century. This special issue brings together contributions from speakers and panelists who participated in DCI’s second annual conference in October 2024. This article is authored by Nicholas Banasevic, Microsoft’s Head of Competition and Regulation for Europe, the Middle East and Africa.

Abstract: Artificial Intelligence (“AI”) has transformative economic potential across all sectors. This article explores how to harness AI’s potential while maintaining an open and competitive economy. It outlines the benefits of effective diffusion of AI, the structure and economics of the AI value chain, the role of investment and partnerships in fostering innovation and competition, and how AI can contribute to European competitiveness.

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1. Introduction

Artificial Intelligence (AI) has a transformative economic potential across all sectors. AI can help solve the biggest societal challenges including in relation to climate change, more sustainable energy use and food production, and can lead to real advances in the detection and treatment of disease.

Against this backdrop, this article examines how best to harness AI's potential whilst at the same time keeping the AI economy open and competitive. Section 2 outlines how the benefits of AI are best achieved via the effective diffusion of the technology and describes in high-level terms the structure and economics of the AI value chain. From this starting point, section 3 looks at the role of investment and partnerships in the AI economy and in that context examines how to think about innovation and competition in AI-related markets. Section 4 then briefly examines AI and competitiveness in the European context, and section 5 concludes.

2. Technology diffusion and the AI value chain

AI is a general-purpose enabling technology,¹ much like electricity – an innovative technological development with the potential to lead to scientific progress, new social and economic opportunities, and a boost across all sectors of the economy. Historically, the effective diffusion of such technologies has often been the critical driver of productivity growth, and hence economic and societal progress.² In this respect, AI users are generally more productive and we are already seeing productivity gains in businesses that are using AI versus those that do not.³ That productivity advantage is closely linked to digital capabilities and skills, and research suggests that more competitive firms are more likely to adopt AI in the first place.⁴

To understand how the benefits of AI can best be harnessed through its widespread development and diffusion, it is important to first describe the different levels of the AI value chain. Broadly speaking, there are three core conceptual layers, although the reality is more complex and each layer described below itself contains a number of additional layers and/or elements.

¹ See e.g. Ding, J. (2024). “Technology and the Rise of Great Powers: How Diffusion Shapes Economic Competition” Princeton University Press.

² Ibid

³ See for example <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier>

⁴ See for example <https://www.mckinsey.com/mgi/our-research/a-new-future-of-work-the-race-to-deploy-ai-and-raise-skills-in-europe-and-beyond>

The first layer is the necessary infrastructure on which AI models are trained and deployed. Building out this infrastructure is a resource-intensive and multi-faceted endeavour which involves *inter alia* land, buildings, power, chips and connectivity, and associated skills and expertise.

The second layer is the AI foundation models themselves. These are technologically sophisticated large machine learning models which serve as a general basis for a broad variety of different tasks. Such models are trained on extensive datasets, often comprising different types of information (e.g. text, images) that can then be fine-tuned for different specific tasks or applications. The growth of foundation models has exploded in the last 2-3 years, not least after the groundbreaking development of OpenAI's Chat GPT which was publicly launched in November 2022.

The third layer is AI applications – these are generally built from the base layer of AI foundation models, or on the basis of a combination of a foundation model and other technologies or sources of information. There are different use cases for these applications, whether that be consumers, businesses, or public administrations, and it is through these uses that the benefits of AI are delivered. For consumer AI applications, the main distribution avenues are the same as those through which other digital applications have been distributed in recent years, with the mobile channel being particularly important. Enterprises are key players in the development of commercial AI applications and their distribution to relevant users. These applications may not be made available to the general public but the AI technology is incorporated in either new applications or enhances existing applications or products.

From a market structure perspective, based on the above, the AI value chain can conceptually be analysed in the same way as other sectors in both the digital or non-digital sphere, with different vertical layers and different (or sometimes the same) players at various levels of the chain. In terms of how competition plays out across this value chain, the same types of issues that arise in other digital sectors are also relevant here, for example, openness of the platforms on which AI models run, access to data on which models train, ease and methods of distribution and so on.

At the same time, there is a need for a nuanced and sophisticated factual analysis of the relevant issues. For example, the network effects analysis that has been applied in recent years to digital platforms such as search engines or social networks may not be able to be applied in the same way to AI. In addition, technological developments may lead to changes in our understanding of certain competitive dynamics, as recent experience shows. In this respect, the initial received wisdom in relation to AI

foundation models has been that the computing infrastructure on which these models are developed needed to be very significant and that the main models themselves would be proprietary. But the recent Deepseek example, with all the caveats that may need to be made (e.g. in relation to intellectual property or privacy), highlights *inter alia* that meaningful AI model development may: (1) be possible with significantly lower computing infrastructure requirements; and (2) also be based on open-source models. This in turn may have potential implications for how issues of market structure and competition should be analysed, if for example, access to computing infrastructure is less important.

3. Investment, partnerships and competition

Notwithstanding the potential implications of Deepseek described above, the underlying AI infrastructure, and in particular the computing infrastructure, is likely to continue play a significant role in the development and diffusion of AI. The investments required for this are significant. Like a number of other companies, Microsoft is investing heavily to expand and build out its AI infrastructure to ensure that developers have access to the compute power they need to build AI models and AI-powered applications and services. Its global investments in cloud and infrastructure have totalled tens of billions of dollars, including in the EU where Microsoft has committed to investing more than USD 20 billion in data centres in the last 18 months. In Europe, Microsoft is expanding its datacentre investment by 40% over the next two years, reaching 200 data centres in 16 countries by 2027.⁵

In parallel, partnerships across the AI value chain are key to ensure healthy markets and to facilitate competition. Of course, partnerships are nothing new in the tech sector, where for decades different technologies have built on each other, hardware and software have needed to work together, and networks have been needed to connect users and technology. But they are particularly important in the AI economy.

In the first place, many of the organisations that create AI models are startups or small companies. Where the underlying AI infrastructure requirements are large and capital-intensive, partnerships which allow smaller-scale AI developers to access the infrastructure which they cannot develop themselves are both necessary and beneficial, and facilitate market entry and expansion. The market entry of many startups has been enabled or accelerated through investments or partnerships – examples include Anthropic, Mistral, Adept, AI21 Labs, Aleph Alpha, Cohere, Databricks, Deci, EvolutionaryScale, Inflection, Stability AI, and OpenAI. By

⁵ See also <https://blogs.microsoft.com/on-the-issues/2025/04/30/european-digital-commitments/>

providing these companies with funding and access to computing infrastructure, the pace at which entry and expansion occur has increased, which in turn results in more competition, innovation, and choice.

In the second place, partnerships make the diffusion of AI possible. Large and small enterprises of all types which seek to develop and distribute new, innovative AI products and services need to use and access the relevant AI models and the infrastructure on which they are built. On that basis, the transformative benefits of products incorporating AI can be delivered across all sectors of the economy.

Without meaningful partnerships, the main prevalent model that would exist would be a vertically integrated one. In such a world, where every player would need to be vertically integrated, the number of competitively significant companies that could participate would be low. Partnerships can therefore help avoid bottlenecks and prevent markets from tipping, which can distort markets either upstream or downstream.

To achieve this and maximise the possibilities of competition and minimise the risks of lock-in, partnerships need to have an open approach. By way of illustration, under its AI Access Principles,⁶ Microsoft builds its AI infrastructure in a way that promotes openness and competition, in particular through: (1) hosting all types of legal AI models on the Microsoft platform (proprietary and open-source); and (2) using public APIs for the AI models that Microsoft hosts to enable developers to readily access and use them. On this basis, more than 1,800 large language AI models are available today for developers to access on the Microsoft Azure platform.⁷

4. AI and competitiveness

A thriving and competitive AI ecosystem will also be conducive to economic competitiveness, something that is a key priority in the European context. The development and diffusion of AI has the potential to contribute significantly to innovation and growth. European companies have strengths in many areas, for example in sectors such as chemicals, pharmaceuticals, medical devices, manufacturing, cars, and energy, to name just a few. AI has the potential to positively transform industries and the companies active in them – and hence allow European companies to establish or build out their leading edge.

⁶ See <https://blogs.microsoft.com/on-the-issues/2024/02/26/microsoft-ai-access-principles-responsible-mobile-world-congress/>

⁷ See for example <https://azure.microsoft.com/en-us/blog/boost-processing-performance-by-combining-ai-models/>

In this context, the Draghi report⁸ highlighted the importance of integrating AI into sectors where Europe has traditionally been strong and how this vertical integration through partnerships will be a key factor in unlocking higher productivity across a range of sectors. In the same vein, the European Commission's Competitiveness Compass⁹ stresses the importance of the *"diffusion of advanced technologies across the European economy"*¹⁰ and in this context, talks of how *"integrating AI into strategic sectors where Europe has traditionally been strong will be critical to maintaining their competitive edge"*¹¹ and how the EU's Apply AI Strategy *"will aim to boost new industrial uses of AI in sectors, such as manufacturing, automotive, energy, robotics, pharmaceutical and aeronautics, financial services, as well as to improve public services, for example in healthcare and justice."*¹²

5. Conclusion

We are at a significant moment in time where the transformative benefits of AI are starting to be more widely understood, and indeed felt. For innovation and competition to flourish, it is important to avoid bottlenecks that would slow down technological development and limit the diffusion of AI. At the same time, whilst the traditional conceptual framework of competition law is generally well-suited to analyse the competitive dynamics in the AI economy, it is critical that the application of the relevant analytical tools is based on a detailed and nuanced appreciation of the facts, and in particular a detailed understanding of the nature and functioning of AI technology, and the associated dynamics of the AI value chain. On that basis, we will be on a good path for the benefits of AI to be maximised and delivered throughout all sectors of the economy and society.

⁸ See https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en

⁹ https://commission.europa.eu/document/download/10017eb1-4722-4333-add2-e0ed18105a34_en?filename=Communication_1.pdf

¹⁰ Ibid, page 7

¹¹ Ibid

¹² Ibid