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Unveiling the Algorithmic Curtain: Exploring the Complex Nexus of AI and Antitrust Investigations

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Abstract: This research article has been undertaken to explore the relationship between Artificial Intelligence and its utility in antitrust investigations. It discusses how antitrust regulators can advance their mechanisms to meet the rising risk of antitrust practices through decision-making systems based on algorithms. The article further discusses global initiatives undertaken by competition regulators to embrace digital transformation, employing AI tools for investigation and enforcement. Case studies from Italy, Greece, Spain, the UK, and Poland highlight the diverse approaches adopted by regulatory bodies to address anticompetitive practices facilitated by AI. Finally, the article underscores the primary concerns of competition authorities regarding mergers and acquisitions in the generative AI sector, emphasizing the need for robust regulatory frameworks to safeguard competition. In conclusion, it reflects on the challenges and opportunities associated with the shift towards "antitrust by algorithm" and the imperative for informed decision-making in deploying algorithmic tools for enforcement purposes.

Keywords: Artificial Intelligence (AI), Competition law, Antitrust regulation, Generative AI, Global initiatives.

Introduction

It has been rightly said that modern problems call for modern solutions. Ever since its inception, Artificial Intelligence (hereafter referred to as "AI") has penetrated almost all professional domains owing to its symbiotic utility. Notorious for being "disruptive", AI has been largely used to expedite legal research, analysis, and data mining, among other uses via electronically input data. The AI wave, popularly called the Fourth Industrial Revolution, has engulfed the arena of competition law and antitrust regulation across the globe. AI has revolutionized our daily lives by impacting our decision making including finance, healthcare, and transportation. The use of algorithmic systems by businesses to make decisions enhances the risk of anti-competitive practices. Thus, there is an escalating need to develop compatible monitoring tools to detect antitrust actions.

Data-Driven Insights: AI's Role in Business Operations

AI enables the identification of insights within data that may elude human perception. Through the analysis of extensive datasets and the recognition of patterns, AI becomes a valuable tool for enhancing business operations and processes. For instance, it can discern customer behavior trends, enabling businesses to tailor their marketing strategies and enhance overall customer satisfaction.[1] Similarly, AI aids businesses in forecasting product demand, facilitating optimal inventory management, and preventing issues such as stockouts or excess inventory. Another pivotal role of AI in decision-making lies in the automation of specific tasks. These tasks, often time-consuming and prone to suboptimal human decisions, can be executed more swiftly and accurately by AI. An illustrative example is the use of AI by airlines to real-time analyze factors like demand and competition for optimizing ticket prices, resulting in more effective pricing decisions.[2]

Market Distortions and Regulator Dilemmas

Global competition regulators have naturally concentrated on examining how companies, particularly those in competition with each other, might leverage AI and pricing algorithms to subvert competitive dynamics.[3] Thus far, authorities responsible for enforcing antitrust regulations have shown limited initiative in addressing companies employing algorithms to enable practices that undermine competition.[4]

Nevertheless, numerous research endeavors have delved into algorithmic concepts of harm, revealing how rival firms can employ algorithms to effectively attain collusive outcomes (coordinated effects) or enable dominant firms to partake in exclusionary or exploitative behaviors (unilateral effects).[5]

The implementation of algorithmic pricing carries the risk of generating market distortions, whether deliberate or inadvertent.[6] This poses a challenge for regulators in discerning between genuine market efficiencies and practices that undermine competition. The use of self-learning algorithms introduces an additional layer of complexity, as market collusion can potentially take place without direct human involvement, adding to the intricacy of the regulator's role.[7]

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[1] Alessandro Chimera, *How artificial intelligence can inform decision-making*, THE ENTERPRISERS PROJECT (Feb. 5, 2024, 10:08 PM), https://enterprisersproject.com/article/2023/4/ai-decision-making.
[2] *Id.*
[3] Antonio Capobianco, *The Impact of Algorithms on Competition and Competition Law,* PROMARKET (Feb. 5, 2024, 10:18 PM), https://www.promarket.org/2023/05/23/the-impact-of-algorithms-on-competition-andcompetition-law/.
[4] *Id.*
[5] Thomas K. Cheng and Julian Nowag, *Lund University Legal Research Paper Series*, LundLawCompWP 1 (2022), https://www.gov.uk/government/publications/algorithms-how-they-can-reduce-competition-and-harmconsumers/algorithms-how-they-can-reduce-competition-and-harm-consumers.
[6] Cary Coglianese, *AI For the Antitrust Regulator*, PROMARKET (Feb. 5, 2024, 10:18 PM), https://www.promarket.org/2023/06/06/ai-for-the-antitrust-regulator/.
[7] *Id.*

To tackle these challenges, antitrust authorities might find it necessary to revise specific antitrust regulations.[8] However, at the very least, they must adjust to the evolving business landscape by, when deemed suitable, incorporating similar algorithmic tools into their monitoring initiatives.[9] The escalating intricacy of business practices and the growing dependence on advanced digital technology underscore the importance for regulators to explore how they can leverage these advancements to their advantage.[10]

Global Initiatives: Competition Regulators' Digital Transformation

Competition regulators are beginning to explore the development of internal digital investigation tools.[11] Some have already established dedicated digital units incorporating AI systems for handling real cases.[12] Additionally, there is a trend of hiring IT specialists to infuse digital expertise into competition agencies, aiding case handlers in comprehending the advantages of digitalization in enforcing competition law.[13] Several competition authorities have ongoing projects that they aspire to integrate into actual cases in the imminent future.[14]

Italy

The Italian Competition Authority, Autorità Garante della Concorrenza e del Mercato, has initiated a pilot project that utilizes data analysis, AI, and machine learning techniques, including classification, clustering, and reinforcement learning.[14] The project aims to investigate online platforms like Amazon and their ranking algorithms to identify potential competition issues such as price discrimination and collusion. The software employed examines the parameters influencing Amazon's algorithm in determining the winner of the "Buy Box." Data collection involved daily web scraping for a month to build a database, followed by the implementation of a supervised ML algorithm, "Random Forest," which successfully identified some parameters influencing the Buy Box outcome.[15]

Greece

Similarly, the Greek Competition Authority, the Hellenic Competition Commission, has established a Forensic Investigation Detection Unit equipped with its data collection platform, the Data Analytics & Economic

[8] Robert Zev Mahari, Sandro Claudio Lera, & Alex Pentland, *Time for a New Antitrust Era: Refocusing Antitrust Law to Invigorate Competition in the 21st Century,* STANFORD COMPUTATIONAL ANTITRUST (Feb. 5, 2024, 10:18 PM), https://law.stanford.edu/wp-content/uploads/2021/04/pentland-computational-antitrust-project.pdf.
[9] *Id.* at 6.
[10] Cary Coglianese & Alicia Lai, Antitrust by Algorithm, STANFORD COMPUTATIONAL ANTITRUST (Feb. 5, 2024, 10:18 PM), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3985553&download=yes.
[11] Isabella Lorenzoni, *Why do Competition Authorities need Artificial Intelligence?,* YARS. 26, 33 (2022), https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/yars26&section=6.
[12] *Id.*
[13] *Id.* at 11. [14] *Id.*
[14] *Id.* at 11.
[15] *Id.*

Intelligence Platform. This platform gathers publicly available data from various sources, including retail, fuel, vegetables, fruit prices, and public procurement data.[16]

Spain

In 2018, the Spanish Competition Authority created an Economic Intelligent Unit responsible for enhancing ex officio investigations and detecting anti-competitive behaviors. This unit employs data mining, quantitative techniques, and forensic analysis to identify collusive patterns in the data. Advanced statistical and econometric techniques, network analysis, and machine learning methods are applied, particularly in cases of bid rigging cartels in public procurement. The unit also addresses the challenges of digital reality and analyzes and detects behaviors like algorithmic collusion.[17]

UK

Since 2018, the UK Competition and Markets Authority (CMA) has established a fully developed Data, Technology, and Analytics (DaTA) Unit comprising a team of around 50 individuals, including data scientists, lawyers, and economists. This unit employs data engineering, machine learning, and artificial intelligence solutions in consumer, merger, and antitrust cases. It aids in detecting suspicious market movements through network analysis and uses natural language processing to review internal documents from companies. Additionally, the DaTA Unit helps the CMA understand how companies' algorithms operate, their purpose in using AI and ML, and how they utilize collected data to determine if intervention is necessary and if a breach of competition or consumer law is anticipated.[18]

Poland

The Polish Office of Competition and Consumer Protection (UOKiK) has launched a project in consumer protection that encourages the use of AI to detect unfair contract terms before a violation occurs. AI technologies automatically analyze online contract templates to identify potential unfair terms and conditions, facilitating consumer protection enforcement. The Polish government has initiated “GovTech Polska” to develop innovative digital solutions for the public sector by connecting public administration with entrepreneurs, start-ups, the scientific community, and citizens, contributing to the technological revolution.[19]

[16] *Id.*
[17] *Id.*
[18] *Id.*
[19] *Id.*

Primary Concern of Competition Authorities

The areas of focus for competition authorities include mergers and acquisitions activity as bundling, tying, and self-preferencing.[20]

Competition authorities have expressed worries that mergers and acquisitions within the industry could reduce competition in markets related to the development and use of generative AI applications. They are particularly concerned about vertical transactions, which might restrict access to crucial resources like unique and necessary datasets.[21] Similarly, horizontal transactions, where established companies acquire emerging competitors, will undergo close examination due to fears of monopolistic practices in the technology sector.[22]

Issues of competition may be more prevalent in specialized or heavily regulated fields like healthcare or finance, where data access is limited. There is likely to be a growing discussion on whether the current frameworks for approving mergers are adequate to address these concerns. This debate is already unfolding in Australia, especially concerning digital platforms in general.[23]

The dynamics within the generative AI industry could facilitate instances of anticompetitive behavior, such as actions that violate regulations against the abuse of dominance (in the EU and UK) or the misuse of market power (in Australia).[24]

Specifically, regulatory bodies like the Federal Trade Commission (FTC) of the US, the Australian Competition and Consumer Commission (ACCC), and the UK's Competition and Markets Authority (CMA) have expressed concerns about vertically integrated companies that provide generative AI solutions as part of a wider technology product and service environment. These firms may be inclined to engage in discriminatory practices. The worry is that digital platforms with interests in generative AI models might limit their customers' access to data necessary for developing competing AI models. Similarly, established companies offering both generative AI products and cloud computing services might offer computing services to new entrants on unfair terms, such as raising prices or lowering quality.[25]

Another concern arises when generative AI providers offer their applications directly to consumers while also offering an API that allows other companies to use the underlying AI model and develop their own applications

[20] Thomas Jones, Matthew Bovaird, Patrick Cordwell and Dylan McGirr, *Artificial Intelligence: Competition and antitrust's next frontier?*, Lexology (April 19, 2024, 4:12 PM), https://www.lexology.com/library/detail.aspx?g=b98f8cb6-4d15-4a60-853c-48f657ec7c70.
[21] *Id.*
[22] *Id.*
[23] *Id.*
[24] *Id.*
[25] *Id.*

(for instance, OpenAI provides both ChatGPT and API access to the GPT-4 model). There's a risk that incumbent firms will attempt to control access to their API in a way that protects their dominant position.[26]

Lastly, the FTC, ACCC, and CMA have raised worries that firms operating in related digital platform service markets might tie the availability of generative AI services to the usage of their other products (like search engines, web browsers, software, or operating systems). Alternatively, these firms might use generative AI applications to prioritize their own products or services within their ecosystem.[27]

Conclusion

Based on interviews conducted in this domain, it became evident that the primary objective of most competition authorities is to enhance their digital enforcement tools.[28] However, this process is anticipated to be time-consuming in many instances. Among the challenges identified, the lack of sufficient data poses the most significant obstacle, rendering the use of AI impractical. Additionally, some competition authorities face constraints in terms of inadequate resources for developing in-house AI systems or a limited number of cases that necessitate the utilization of AI. The shift towards an era characterized by "antitrust by algorithm" is expected to be a complex undertaking. Antitrust regulators will need to make informed decisions regarding when and for what specific purposes to deploy various algorithmic tools and how these tools should be designed and implemented.

References

1. Alessandro Chimera, *How artificial intelligence can inform decision-making*, THE ENTERPRISERS, https://enterprisersproject.com/article/2023/4/ai-decision-making.

2. Antonio Capobianco, *The Impact of Algorithms on Competition and Competition Law*, PROMARKET, https://www.promarket.org/2023/05/23/the-impact-of-algorithms-on-competition-andcompetition-law/.

3. Thomas K. Cheng and Julian Nowag, *Lund University Legal Research Paper Series*, LundLawCompWP 1 (2022), https://www.gov.uk/government/publications/algorithms-how-they-can-reduce-competition-and-harmconsumers/algorithms-how-they-can-reduce-competition-and-harm-consumers.

4. Cary Coglianese, *AI For the Antitrust Regulator*, PROMARKET, https://www.promarket.org/2023/06/06/ai-for-the-antitrust-regulator/.

5. Robert Zev Mahari, Sandro Claudio Lera, & Alex Pentland, *Time for a New Antitrust Era: Refocusing Antitrust Law to Invigorate Competition in the 21st Century*, STANFORD COMPUTATIONAL ANTITRUST, https://law.stanford.edu/wp-content/uploads/2021/04/pentland-computational-antitrust-project.pdf.

6. Cary Coglianese & Alicia Lai, Antitrust by Algorithm, STANFORD COMPUTATIONAL ANTITRUST, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3985553&download=yes.

[26] *Id.*
[27] *Id.*
[28] Lorenzoni, supra note 11.

7. Isabella Lorenzoni, *Why do Competition Authorities need Artificial Intelligence?,* YARS. 26, 33 (2022), https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/yars26&section=6.

8. Thomas Jones, Matthew Bovaird, Patrick Cordwell and Dylan McGirr, *Artificial Intelligence: Competition and antitrust's next frontier?,* Lexology, https://www.lexology.com/library/detail.aspx?g=b98f8cb6-4d15-4a60-853c-48f657ec7c70.