THE IMPACT OF ARTIFICIAL INTELLIGENCE ON COMPETITION LAW

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ABSTRACT

Technological Advancement is no news in today's world, with each passing day technology is advancing rapidly and this advancement give rise to the Artificial Intelligence or we can say AI which is developing per second as we speak. The main aim of AI is to develop machines that possess human like intelligence. Artificial Intelligence has a potential to disrupt the market forces and has an ability to topple the balance between competition law and its enforcement. As the evolvement of AI continues, regulators and legal professionals are struggling with its implication on fair competition, market dominance and consumer welfare. It is true that Technological Advancements provides ease to consumers but they are also inducing market forces which eventually affect the competition in the market which can infringe their interest. The main aim of this paper is to examine how AI is impacting the market forces and how it is affecting the competition in the market.

Keywords: artificial intelligence, competition law, market, competition.

Introduction

The dynamic and rapid growth of Artificial Intelligence can be seen across various sectors. AI helps the professionals by enabling new innovations, enhancing decision making, boosting productivity and improving efficiency etc. AI may be considered as the fourth technological revolution and also it has its benefits but it also presents it threat in socio-economic life, including law. While there are numerous benefits of AI, but there are still challenges for AI to overcome specially in the field of competition law which was highly impacted by AI in recent years. Competition law was enacted to ensure fair Competition across market by prohibiting anti competitive practices and market dominance and to protect consumer welfare. The major concern here is that with the rapid progression of AI in the market, it will slow down the traditional regulatory act and affect the fair competition in the market. The Idea of this paper is to examine the AI's impact on competition law, global regulatory challenges, and India's legal framework, including the CCI's role and policy recommendations.

AI's Impact on Competition law

AI-Driven Pricing and Market Competition

The Determination of Prices in a market refers to setting the cost of goods sold and services rendered in the free market. In a free market, the forces of demand and supply determine the prices. There are several factors which determine the price in a market which include product cost, utility and demand, degree of competition in the market, price target and other economic conditions. Competition law safeguards these free market forces of Demand and Supply by prohibiting anti-competitive agreements, preventing abuse of dominant positions, regulating mergers or acquisitions, promoting consumer welfare and addressing market failures. Artificial Intelligence has brought about a paradigm shift in price determination altering traditional pricing mechanisms through algorithms, big data analytics and automated decision making. AI driven strategies are used by E- commerce platforms, ride- sharing services and airline industries to maximize profits and optimize pricing dynamically. As AI improves efficiency, it also shows some competition issues. Even though algorithmic pricing has its potential to result in tacit collusion when AI systems inadvertently coordinate the setting of prices without explicit human participation, making it real hard for the regulators to detect it. Also, big firms or entities using AI-based market knowledge might achieve an unfair competitive edge over smaller competitors. As AI continues to transform market pricing, regulators encounter new

challenges in tracking and managing AI-based anti-competitive activity.

ALGORITHMIC COLLUSION

Algorithm collusion is the coordination between algorithms that are primarily intended to work independently but they end up working together and produce a result which is harmful or unfair. This occurs when Algorithms are created to make decisions that are guided by each other behavior which leads to the outcome that are not consistent with original purpose. The example of algorithmic collusion is two algorithms collusion are designed to compete against each other but they are working together to manipulate the market. This can cause price fixing, decreased competition and other undesirable consequences.[1] This can happen when algorithms are trained on biased data, which leads them to make decisions that perpetuate these biases. Therefore, it is necessary to have these algorithms designed and monitored to prevent collusion and in addition to ensuring that they are generating ethical and fair decisions. Algorithmic collusion may arise due to several ways, depending upon the particular enviornment in which algorithms are deployed. According to Ariel Ezrachi and Maurcice E. Stucke , Algorithms can be used for collusion in four ways[2]:

1. Messenger Scenario: In messenger scenario, the market players use computers or a single person as a means of collusion.

2. Hub-and-spoke conspiracy: This type of conspiracy involves an agreement that is created by vertical or horizontal players (spokes) through the utilization of a platform (hub), which is similar to an indirect agreement. In this case, a single price algorithm is employed, just like in the messenger case, but it is the algorithm developer who forces the players to conspire. Therefore, the agreement is centered on how the hub will be utilized.

3. Predictable agent : Under this category, there is no collusion among competitors. Each firm unilaterally uses its own pricing algorithm, and as predictable agents they monitor

[1] **Vinay Sachdeva (2023):**
Vinay Sachdeva, *Changing Dynamics of Algorithmic Collusion: An Analytical Study*, SCC Online Blog (May 18, 2023), https://www.scconline.com/blog/post/2023/05/18/changing-dynamics-of-algorithmic-collusion-an-analytical-study/.

[2] **Ariel Ezrachi & Maurice E. Stucke (2017):**
Ariel Ezrachi & Maurice E. Stucke, *Algorithmic Collusion: Problems and Counter-Measures*, OECD Working Paper No. DAF/COMP/WD(2017)25 (May 31, 2017), https://one.oecd.org/document/DAF/COMP/WD%282017%2925/en/pdf.

and adjust with each other's price. therefore, even though competitors do not adopt the same algorithm, tacit collusion is still impacted by programming algorithms to adjust to each other's price.

4. Autonomous Machine: It includes self- learning algorithms that cooperate even though they are not programmed to do so in response to market data or price changes. According to the Organisation for Economic Cooperation and Development (OECD) Report, while it is not yet fully clear how machine learning algorithms might reach a collusive outcome but, having established that there are circumstances in the market for collusion , it is possible that algorithms learning more quickly than humans could achieve a cooperative equilibrium.

AI and Market Dominance

AI dominance refers to a condition where artificial intelligence systems become highly proficient in performing tasks and are deeply integrated across industries, exerting strong influence and control over decision- making. AI supermacy can manifest in several ways:

1. Market Dominance: AI-driven firms and technologies acquire a significant share of the global market, becoming de facto industry leaders.

2. Integration into the society: As AI system pervade, impacting daily life, from medicine and education to transportation and leisure.

3. Strategic Importance: Many countries and organizations prioritize AI development and development for economic, military, and geopolitical advantage.

The key factors that contribute to AI supremacy are by having access to huge data, speedy technological progress, huge investments, favorable policies, and abundance of talent- allowing nations and organization to drive innovation and shape the world.

Global Regulatory Challenges

Detection and Liability Issues

Regulators are unable to identify AI-driven anti-competitive behavior because algorithms are sophisticated and opaque. Holding corporations responsible for AI-driven decisions is

also challenging as long as liability allocation is involved[3]. Modern AI systems, particularly those machine learning- based systems, are 'black boxes', and it is difficult to break through and understand their decision making processes. The lack of transparency makes it more difficult to ascertain whether and how anti- competition behaviors such as algorithmic collusion occur, where AI systems can learn without human guidance to collude on market strategies or prices. The traditional antitrust models, based on evidence of explicit agreements between the parties, can be of no immediate help in a case like this.[4] Assigning accountability for the decisions made through AI complicates enforcement even further. Independent algorithms that seek anti-competitive behavior without the intervention of human beings complicate determining responsibility. It was not clear whether the onus would fall on the developers who had created the algorithms, the companies that were using them, or other entities.This issue becomes particularly pertinent when algorithms change and grow in unforeseen ways and are able to create anti-competitive outcomes that have not been intentionally or even spontaneously planned or foreseen by their developers.[5]

Solving these challenges involves reconsidering current antitrust enforcement tools and legal frameworks. Regulators could be compelled to create new means of monitoring and analyzing algorithmic behavior, and to set forth clearly guidelines for accountability in the event of AI-facilitated anti-competitive behavior. This may include the imposition of requirements for transparency for algorithmic decision-making and establishing standards for ethical use of AI to enforce competition law compliance.

Different Approaches by Global Regulators

European Union (EU): DIGITAL market ACT (DMA)

The European Union's Digital Markets Act (DMA) which seeks to facilitate the fair

[3] **European Commission:**
European Commission, *Competition Policy for the Digital Era* (2019), https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf.
https://op.europa.eu/en/publication-detail/-/publication/21dc175c-7b76-11e9-9f05-01aa75ed71a1/language-en

[4] **OECD (2017):**
Organisation for Economic Co-operation and Development (OECD), *Algorithms and Collusion: Competition Policy in the Digital Age* (2017), https://www.oecd.org/en/publications/algorithms-and-collusion-competition-policy-in-the-digital-age_258dcb14-en.html.

[5] **Michal S. Gal & Niva Elkin-Koren (2017):**
Michal S. Gal & Niva Elkin-Koren, *Algorithmic Consumers*, 30 Harv. J.L. & Tech. 309 (2017), https://jolt.law.harvard.edu/assets/articlePDFs/v30/30HarvJLTech309.pdf.

competition by regulating the large online platforms classified as "gatekeepers." Although the DMA is not directly AI focused, it touches on AI tools integrated into core platform services like recommendation algorithms, search rankings, and personalized advertising. The High-Level Group on the DMA recently emphasized the alignment of AI innovation with the objectives of the Act so as not to provoke distortive market effects[6].

United States (US): FTC and DOJ on AI and Antitrust

In the US, the Federal Trade Commission (FTC) and Department of Justice (DOJ) have stepped up their focus on AI applications in anti-competitive conduct. The FTC's Operation AI Comply is aimed at preventing false use of AI by business and false AI-related advertising. The FTC and DOJ also issued joint statements to pledge to track AI's impact on competition and push enforcement mechanisms to evolve accordingly[7].

China's **Provisional Measures for the Administration of Generative Artificial Intelligence Services** (2023) are intended to oversee the development and use of AI with emphasis on transparency, algorithm accountability, and protection of user data. The regulations cover domestic and foreign companies and are an indication of China's approach to retaining control over rapidly developing AI sectors. China's antitrust enforcer has been said to have launched probes into technology companies like Nvidia over suspected dominance abuse in AI chip markets[8].

India's Legal Framework and Role of CCI

Competition Act, 2002 and AI Regulation

The Competition Act, 2002 aims to eliminate the an anti- competitive behavior by prohibiting anti competitive agreements , abuse of dominant positions, takeover and control, and mergers

[6] **European Commission (2024):**
European Commission, *High–Level Group on the Digital Markets Act Agrees to Coordinate Efforts to Ensure AI Development Aligns with the DMA* (May 23, 2024), https://digital-markets-act.ec.europa.eu/high-level-group-digital-markets-act-agrees-coordinate-efforts-ensure-ai-development-aligns-dma-2024-05-23_en.
[7] **Federal Trade Commission (2024):**
Fed. Trade Comm'n, *FTC Announces Crackdown on Deceptive AI Claims and Schemes Under Operation AI Comply* (Sept. 2024), https://www.ftc.gov/news-events/news/press-releases/2024/09/ftc-announces-crackdown-deceptive-ai-claims-schemes.
[8] **Kynge & Liu (2024):**
James Kynge & Qianer Liu, *China Launches Antitrust Probe into Nvidia*, Fin. Times (Mar. 8, 2024), https://www.ft.com/content/1b1ed4b3-4ecf-47a1-8a25-fee8391b88b6.

and acquisitions that can cause negative impact or we can say appreciable adverse effect on competition in India. However, the act does not explicitly discuss the AI – related issues directly which create a regulatory gap about how to deal with issues relating to algorithmic collusion when companies employ AI algorithms with no human intervention for anti-competitive purposes.[9]

Role of Competition Commission of India

The Competition Commission of India (CCI) is a chief regulatory body that is required to enforce the Competition Act, 2002. The CCI has recently stepped up surveillance of the digital economy and emerging technologies, especially AI- driven practices that could potentially harm the market competition.

Investigation of Technological Firms

The CCI penalized Google to the tune of Rs. 1337.76 crore in October 2022 for abusing its dominance position in the Android ecosystems. The commission stated that Google's conduct was suppressing competition by subjecting OEMs to uni-lateral terms and denying free choice to end-users. While the order was rooted in traditional abuse of dominance, it also addressed automated processes extending dominance with a nod to the role of AI in anti-competitive practices.[10]

AI and Collusion Risks

In March 2024, CCI Chairperson Ravneet kaur referred to the potential for AI-facilitated collusion- algorithmic price coordination and non-human cartels-via the 10th National Conference on Economics of Competition Law. She emphasized the need of regulatory preparedness in detecting such advanced AI-facilitated conduct, which may lie beyond the

[9] **Prime Legal (2025):**
Prime Legal, *Legal Concerns of Algorithmic Collusion and Lack of Framework in Companies Competition Act* (2025), https://blog.primelegal.in/legal-concerns-of-algorithmic-collusion-and-lack-of-framework-in-companies-competition-act/.
[10] **SCC Online (2022):**
SCC Online, *CCI Imposes Penalty on Google for Abuse of Dominant Position; Issues Cease and Desist Order* (Oct. 24, 2022), https://www.scconline.com/blog/post/2022/10/24/cci-imposes-penalty-on-google-abuse-of-dominant-position-cease-and-desist-order-dominant-position-legal-news-and-updates/.

ambit of conventional antitrust tools.[11]

CCI's Forward-Looking Approach

The CCI has launched market research and internal consultations on how AI is affecting the Economy. It realizes that there is a need to transform regulatory policies to check algorithmic decision- making and digital dominance. These measures are being taken to shield the economy by stopping AI from eliminating competition and promoting innovation in India's expanding digital economy.

Recent Development and Challenges in India

AI and e-commerce: The CCI has also probed e-commerce portals like Amazon and Flipkart on allegations of anti-competitive behavior in the form of favoring certain sellers and deep discounting policies. These probes suggest the challenge of addressing AI-based pricing algorithms that can facilitate such practices.

Digital Markets Inquiry: The CCI is also probing merger and acquisition deals in the digital economy, specifically "killer" and "creeping" acquisitions. This is with a view to ascertaining whether large digital platforms were acquiring AI startups to stifle competition, a trend likely facilitated by the growing use of AI across industries.

Need for AI-Specific Rules: Recognizing the absence of clear-cut AI-specific competition rules, there has been an increasing need to develop guidelines specifically aimed at addressing AI's unique challenges. The Ministry of Electronics and Information Technology (MeitY) has released a report which is named as 'AI Governance Guidelines Development', which mainly focus on the need for a unified approach to AI regulation that balances innovation with ethics.[12]

In short, while our country's current competition law structure provides a framework for dealing with traditional anti-competitive practices, the rapid development of AI across sectors

[11] **Economic Times (2024):**
AI Has Potential to Enable Collusion, Says CCI Chief, Econ. Times – Enterprise AI (Mar. 15, 2024), https://enterpriseai.economictimes.indiatimes.com/news/artificial-intelligence/ai-has-potential-to-enable-collusion-says-cci-chief/119098156.

[12] **Argus Partners (2024):**
Argus Partners, *Report on AI Governance Guidelines Development*, Welcome to Argus (2024), https://www.argus-p.com/updates/updates/report-on-ai-governance-guidelines/.

necessitates the creation of focused rules and regulations. This will help to prevent AI-driven innovations from exploiting market equity and consumer interest.

Policy Recommendations

Strengthening AI-Specific Competition Laws

The Competition Act,2002, currently lacks clear provisions to fight AI-driven anti-competitive conduct such as algorithmic collusion and AI- driven monopolies. Incorporating AI-specific guidelines would enable the Competition Commission of India (CCI) to address these matters effectively. The Chairperson of the CCI has already sounded the warning that AI will enable the easy establishment of new forms of collusion, such as "cartels without human communication" and "price coordination without explicit agreements.[13]

Improving Transperancy and Accountability

It is important to make AI systems deployed in competition and pricing are understandable and auditable to avoid abuse and facilitating enforcement. Transparent AI algorithms can render it harder for anti-competitive behavior to remain hidden making them more traceable and enabling individuals to be held responsible. Implementing transparency tools, like mandatory AI decision-making processes, can allow regulators and stakeholders to track and address the potential abuses[14]. Furthermore, encouraging the creation of explainable AI models can enhance trust and compliance in the marketplace[15].

Developing AI Skills Within the CCI

In order to properly identify and assess the AI's effect on market competition, the CCI must invesst in internal AI technology and potentially setting up dedicated units that monitor

[13] **Economic Times (2024):**
AI Has Potential to Enable Collusion; Regulators Need to Adopt Forward-Looking Approach: CCI Chief, Econ. Times (2024), https://m.economictimes.com/tech/artificial-intelligence/ai-has-potential-to-enable-collusion-regulators-need-to-adopt-forward-looking-approach-cci-chief/articleshow/119073781.cms.
[14] **Mozilla Foundation (2022):**
Mozilla Found., *AI Transparency in Practice* (2022), https://foundation.mozilla.org/en/research/library/ai-transparency-in-practice/ai-transparency-in-practice/.
[15] **Morgan Lewis (2024):**
Morgan Lewis, *AI Regulation in India: Current State and Future Perspectives* (2024), https://www.morganlewis.com/blogs/sourcingatmorganlewis/2024/01/ai-regulation-in-india-current-state-and-future-perspectives.

algorithmic activity. Such Capacity would allow the CCI to actively detect and address AI-based anti-competitive behaviours.[16]

Conclusion

Artificial Intelligence (AI) is a double-sided sword for competition law. On the positive side, it has increasing potential to promote market efficiency, lower transaction costs, and encourage innovation. Conversely, it harbors enormous risks like algorithmic collusion, abuse of dominance, and diminished market transparency which are bound to compromise fair competition. Everywhere around the world, regulators have already begun calibrating their legal frameworks to address these new challenges, with some parts of the world like the European Union already leading the pack with laws like the Digital Markets Act.

On the contrary, India remains in the initial phases of aligning its competition law framework to address the effects of AI. The Competition Act, 2002 fails to address many issues such as algorithmic practices or anti-competitive behavior by AI and also it makes this difficult for enforcement in digital markets. For a level playing field, it is essential to introduce AI-specific provisions in the law framework, impose transparency and accountability in AI systems, and build technical competence in the Competition Commission of India (CCI). These measures are essential to protect consumer welfare and ensure that the greater use of AI technologies does not distort fair and competitive markets**.**

[16] **RMLNLU Law Review (2020):**
Artificial Intelligence and Market Regulation: The Way Forward for the CCI, RMLNLU L. Rev. (July 17, 2020), https://rmlnlulawreview.com/2020/07/17/artificial-intelligence-and-market-regulation-the-way-forward-for-the-cci/.