Competition Law Regulation in the Field of Generative Artificial Intelligence

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Abstract: Generative Artificial Intelligence (AI), underpinned by the convergence of data and algorithms, has given rise to novel forms of market dominance. Specifically, the emergence of data closed-loops and opaque algorithmic coordination presents significant challenges to established competition law analytical frameworks. Current regulatory mechanisms face several hurdles in addressing these risks, including the obsolescence of legal elements, inadequate regulatory penetration, and ambiguity surrounding the identification of liable entities. To address these issues, it is imperative to develop a comprehensive, end-to-end supervisory framework and enhance multi-stakeholder collaborative governance. By clarifying the legal obligations of various actors based on the principle of fault-based liability, a regulatory pathway can be established that balances the promotion of innovation with the maintenance of competitive order, thereby adapting to rapid technological advancements.

1. Introduction

The rapid advancement of Generative Artificial Intelligence (GenAI) is fundamentally reshaping global industrial landscapes and competitive dynamics. From its early foundations in deep learning to the recent technical breakthroughs exemplified by ChatGPT, GenAI—characterised by heavy data dependency, algorithmic autonomy, and cross-sector generalisation [1]—has generated immense economic value while simultaneously posing novel challenges to the order of market competition.

In response, global governance pathways have begun to emerge. For instance, the European Union (EU) has established the "Gatekeeper" regime under the Digital Markets Act (DMA) to regulate platform power [2], seeking to strike a balance between fostering innovation and mitigating systemic risks. Furthermore, in March 2024, the EU formally adopted the Artificial Intelligence Act—the world's first comprehensive legislative framework for AI—primarily focusing on safety, transparency, and risk governance.

In China, although normative instruments such as the Interim Measures for the Management of Generative Artificial Intelligence Services have been introduced, the primary legal basis for regulation remains the Anti-Monopoly Law. However, traditional competition law analytical paradigms in China are facing a "structural dysfunction" when addressing the specific monopolistic risks triggered by GenAI. Against this backdrop, this article proposes feasible recommendations to

resolve the dilemmas in applying competition law within China's GenAI sector, aiming to provide theoretical insights and structural support for forward-looking regulation in the age of AI.

2. Typological Identification of Monopolistic Risks in Generative AI

2.1 Data Monopoly

In the realm of Generative AI, while data is inherently replicable, it also exhibits characteristics such as non-rivalry, non-excludability, and uncertainty regarding both value and ownership. To a certain extent, these attributes facilitate the formation of data monopolies [3]. The emergence of such monopolies follows a distinct capital-driven trajectory. Specifically, dominant undertakings utilise "killer acquisitions" and strategic alliances to systematically consolidate dispersed data resources, thereby constructing a positive feedback loop of "data scale expansion — algorithmic model optimisation — value creation escalation" [4].

Furthermore, regarding the authorised operation of public data, local governments often adopt highly centralised models [5]. This results in the concentration of critical public data resources within a single or a limited number of entities (predominantly state-owned), creating barriers to entry based on administrative decisions. Data monopoly undermines fair competition, trapping small and medium-sized enterprises (SMEs) in a negative cycle due to their inability to access sufficient high-quality data; this stifles innovation and leads to market stagnation. Moreover, it provides a foundation for undertakings with a dominant market position to engage in abusive conduct and exacerbates infringements on personal privacy. Consequently, there is an urgent need to establish effective collaborative governance mechanisms and a more robust regulatory framework to address the risks of data monopoly in the age of Generative AI.

2.2 Algorithmic Monopoly

Algorithms, by merging technology with data and capital, confer a novel and latent "market power" upon undertakings. This power gives rise to emerging monopolistic risks, primarily centred on the abuse of dominant market positions and algorithmic collusion.

The abuse of dominance mediated by algorithms manifests in two primary forms. First, algorithmic self-preferencing. This has become a quintessential form of abuse within the platform economy [6], whereby a platform utilises its rules or resources to prioritise its own services in rankings or transactions. In essence, this conduct represents a digital evolution of traditional abuses such as refusal to supply, tying, or discriminatory treatment. The competitive risks induced by self-preferencing on digital platforms have evidently exceeded the regulatory boundaries of traditional competition law [7]. Second, "personalised pricing" driven by big data, which involves discriminatory pricing based on granular user data. Market information asymmetries provide firms with significant room for manipulation. Consequently, consumers often forgo their rights due to prohibitive litigation costs and evidentiary hurdles, leaving a vast number of such infractions unpunished. This not only infringes upon consumer rights—specifically the rights to fair trade, information, and autonomy—but also undermines the integrity of market competition, leading to substantial negative repercussions.

Algorithmic collusion presents another formidable challenge within the context of technological monopolies. The most complex variant is tacit algorithmic collusion, achieved through the interaction of code and data without any explicit human agreement. In this scenario, undertakings replace direct communication—such as written contracts, oral promises, or face-to-face negotiations—with actual market conduct. Although there is no interpersonal contact between firms, they are nonetheless able to achieve information exchange and behavioural coordination through algorithmic interplay, thereby producing exclusionary or restrictive effects on competition.

3. Adaptability Dilemmas within the Traditional Competition Law Framework

3.1 Disconnect Between Legal Elements and Technological Reality

The existing rules governing anti-competitive agreements face a dual predicament—an inadequate legal basis and significant operational hurdles—when regulating algorithmic collusion. At the legislative level, although relevant guidelines and the amended Anti-Monopoly Law have introduced provisions for algorithm-facilitated and organisationally-facilitated horizontal agreements, thereby extending liability to platform undertakings, the normative focus remains anchored in determining whether "concerted practices" exist between undertakings.

In practical enforcement, the "black box" nature of algorithms and the opacity of data processing make it exceptionally difficult to obtain evidence of subjective intent. Consequently, the requisite elements for finding concerted practices—namely a "meeting of minds" or an "exchange of information"—are increasingly difficult to substantiate within an algorithmic context.

3.2 Regulatory Lag and Procedural Rigidity

Current competition law enforcement in China leans heavily towards ex-post regulation, characterized by inherent lag and inflexible enforcement mechanisms. Specifically, the relative obsolescence of regulatory technology precludes the establishment of effective early-warning systems for monopolistic conduct. Traditional investigative frameworks, often hindered by protracted timelines and high operational costs, result in a substantive efficacy that fails to keep pace with the rapid evolution of market dynamics.

Furthermore, when regulatory authorities attempt to identify and secure digital evidence sufficient to substantiate "concerted practices" among undertakings, they are confronted with the necessity for highly specialised technical measures and prohibitive costs. This often leads to instances of regulatory failure. Consequently, without the capacity for penetrative review and real-time oversight, regulators are frequently relegated to post-hoc accountability, the effectiveness of which is inherently circumscribed.

3.3 Ambiguity in the Identification of Liable Entities

There exists a significant degree of ambiguity regarding the attribution of legal liability among algorithm designers, undertakings, and potentially the Generative AI systems themselves. Given that the degree of autonomy, roles, and functions of algorithms vary across different scenarios, traditional competition law theories of liability—which are predicated on the "undertaking" as the sole subject— are difficult to apply to algorithmic collusion.

Simplistically concluding that liability should rest entirely with either the algorithm or the undertaking is not only detrimental to the effective regulation of algorithmic abuse but may also result in excessive market intervention, thereby stifling innovation and industrial development [8]. Particularly against the backdrop of inadequate technical explainability, developers may be forced to bear undue legal liability due to the practical impossibility of proving an absence of fault, ultimately resulting in an aggravated compliance burden [9].

4. Systematic Framework for Competition Law Regulation of Generative AI

4.1 Convergence of Ex-post Sanctions and Ex-ante Regulation

To effectively mitigate the monopolistic risks arising from Generative AI applications, it is

essential to establish a comprehensive, end-to-end regulatory system that integrates ex-ante compliance guidance with ex-post case-by-case enforcement.

The core of ex-ante regulation, underpinned by the Anti-Monopoly Law, lies in the application of the "Essential Facilities Doctrine" [10]. This serves to guide dominant undertakings—those controlling critical data, foundation models, or computing power networks—to provide access to their indispensable resources under reasonable conditions, thereby lowering barriers to entry and promoting interoperability.

In contrast, ex-post regulation should adopt a case-specific analytical approach under the "Rule of Reason." This entails a comprehensive assessment of the positive effects of algorithmic conduct—such as efficiency gains and cost reductions—against potential anti-competitive harms, including algorithmic collusion. A balance must be struck between "per se" illegality and "reasonableness" analysis to ensure equitable adjudication. Ultimately, by organically integrating and aligning ex-ante prevention with ex-post corrective mechanisms, novel monopolistic conducts can be managed systematically.

4.2 Multi-stakeholder Collaborative Governance

In the face of monopolistic risks such as algorithmic abuse, regulation by a single statute or government department has proven insufficient. It is therefore imperative to construct a collaborative governance framework encompassing a diverse range of stakeholders. The primary objective is to dismantle regulatory silos and foster collective synergy.

These governance actors should comprise both public and non-public entities. Consequently, specific measures must be designed to incentivise innovation among undertakings while empowering public authorities to provide robust compliance guidance. The establishment of a multi-layered, networked regulatory system—characterised by coordination between departments responsible for competition law, data protection, and consumer rights—will facilitate the alignment of legal rules and the integration of enforcement actions. Such a framework promotes a governance landscape that balances the incentivisation of innovation with risk mitigation, thereby achieving effective and comprehensive regulation of algorithmic monopolistic risks.

4.3 Allocation of Obligations Based on the Principle of Fault-based Liability

Currently, the discourse surrounding the attribution of liability for Generative AI predominantly proceeds on the basis of denying its status as an independent legal person, focusing instead on the liability of its underlying developers, designers, and undertakings. Regarding accountability mechanisms, it is essential to clarify the legal status and obligations of each actor within the GenAI service chain (e.g., developers, operators, and users).

With respect to tortious liability, Generative AI is inherently a service rather than a product. Consequently, the legal framework of "product liability" is ill-equipped to address the risks of infringement arising from GenAI; thus, incorporating it into the scope of product liability does not constitute an effective solution [11]. Furthermore, greater emphasis should be placed on guiding the conduct of service providers and users toward harm prevention, rather than indiscriminately increasing the burden of tortious liability, which may stifle corporate incentives for innovation [12].

Therefore, fault-based liability should be applied when determining tortious responsibility. The design of liability mechanisms must balance the incentivisation of technological innovation with risk mitigation, fostering the development of Generative AI within a rule-of-law framework through a combination of transparency and accountability.

5. Conclusion

The competitive risks inherent in Generative AI primarily manifest in the dual forms of data and algorithmic monopolies. Data resources are subjected to exclusive control through capital concentration and administrative authorisation, while algorithms facilitate latent restrictions on competition via self-preferencing and tacit collusion.

The existing competition law regulatory framework encounters significant adaptability dilemmas: the disconnect between legal constituent elements and the logic of technological operations; the lack of real-time oversight and penetrative power in regulatory instruments; and the difficulty in delineating liability among developers, operators, and technical mediums.

To address these challenges effectively, a comprehensive "end-to-end" governance model should be promoted, integrating ex-ante compliance prevention with ex-post case-by-case adjudication. This necessitates the reinforcement of inter-departmental synergy and multi-stakeholder collaborative governance mechanisms. By rationally allocating legal obligations across all stages based on the principle of fault-based liability, the fairness and openness of market competition can be preserved without compromising incentives for technological innovation. Ultimately, this approach will achieve a structural alignment between legal regulation and technological evolution.

References

[1] You Mingming. "Monopolistic Risks and Regulatory Pathways of Generative Artificial Intelligence: From the Perspective of Economic Law Theory" [J]. Market Modernisation, 2025, (24): 133-135.

[2] Liu Quan. "The Public Nature of Online Platforms and Its Realisation: From the Perspective of Legal Regulation of E-commerce Platforms" [J]. Chinese Journal of Law, 2020, 42(02): 42-56.

[3] Yuan Bo. "Rationales and Approaches for Mandatory Access to Essential Data under Competition Law" [J]. Oriental Law, 2023, (03): 147-161.

[4] Ma Pingchuan and Cheng Xuejun. "Competition Law Regulation of Data-driven Concentrations of Undertakings" [J]. The Legal Person, 2025, (11): 42-44.

[5] Zhong Ying. "Competition Law Regulation of the Authorised Operation of Public Data" [J]. Journal of Comparative Law, 2025, (06): 190-203.

[6] Chen Bing. "The Regulatory Logic of Market Competition Risks of Artificial Intelligence Algorithms from a Competition Law Perspective" [J]. Academic Exchange, 2025, (08): 73-84.

[7] Huang Maoqin and Xu Yujin. "From Self-preferencing to Self-regulation: Governance Strategies for Competition Law Compliance of Digital Platforms" [J]. Journal of Henan University of Economics and Law, 2025, 40(05): 31-44.

[8] Gao Jiancheng. "Challenges and Countermeasures for Competition Law Regulation of Algorithmic Collusion" [J]. Journal of Dalian University of Technology (Social Sciences), 2024, 45(04): 90-100.

[9] Yao Baosong. "Competition Law Regulation of Large AI Models" [J]. Journal of Zhengzhou University (Philosophy and Social Sciences Edition), 2025, 58(05): 52-59.

[10] Ding Guofeng. "Optimisation Pathways for the Application of the Essential Facilities Doctrine in the Regulation of Data Monopolies Involving Refusal to Provide Access" [J]. Social Science Journal, 2025, (06): 201-211.

[11] Zhang Xinbao and Bian Long. "On the Presumptive Fault Liability of Generative AI Service Providers" [J]. Northern Legal Science, 2025, 19(05): 5-19.

[12] Wang Liming. "Legal Responses to Tortious Infringements involving Generative Artificial Intelligence" [J]. China Journal of Applied Jurisprudence, 2023, (05): 27-38.