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Artificial Intelligence and Competitive Dynamics in Downstream Markets

- Session I -

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More documentation related to this discussion can be found at: oe.cd/aidm.

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1. Introduction

1. The AI technology market has grown significantly alongside accelerating technological progress, marked by milestones such as AlphaGo in 2016, ChatGPT in 2022, and DeepSeek in 2025. AI has emerged as a factor of production that shapes the productivity of the economy, extending beyond technology itself. In line with this trend, *AI Transformation* (AX) is underway across industries, with overall business processes being restructured and innovation promoted through the integration of AI technologies. This demonstrates that AI exerts substantial influence on the downstream AI market, where AI technologies are applied and executed, as well as the upstream AI market, where technologies and infrastructure are developed (e.g., foundation models, fine-tuning models, AI semiconductors, cloud computing).

2. AI technology is expected to drive innovation and generate high added value across industries by enhancing firms' efficiency, cost structures, product quality, pricing, and strategic decision-making. At the same time, various antitrust concerns are emerging, such as the leveraging of market power in the downstream AI market and the abuse of dominance by firms that have achieved vertical integration along the value chain. Anticompetitive practices driven by AI may occur, including AI algorithm-based product recommendations and price-setting. These developments pose significant challenges to global competition authorities in establishing a fair competitive order while maintaining AI innovation.

3. This report examines factors affecting the competitive landscape of the downstream AI market and potential issues in competition law, based on the policy report *Generative AI and Competition*, which summarizes the findings of a generative AI market study conducted by the Korea Fair Trade Commission in 2024.

2. Competitive Landscape in the Downstream AI Market in Korea

4. While AI infrastructure and models are developed in the upstream AI market, AI technologies are applied in a wide range of areas, realized into products and services, and then provided to consumers and businesses. In addition to large language model (LLM)-based chatbots (e.g., ChatGPT), the downstream market encompasses wide-ranging products and services, such as AI agents that perform complex decision-making and task automation, as well as other AI-based solutions characterized by high levels of expertise, accuracy, and reliability, equipped with knowledge specialized in industries such as medicine, finance, healthcare, and legal tech. Because AI functions are applied and realized in numerous ways, the scope of this market is very broad.

5. From downstream to upstream, financial and technological capabilities play a central role in shaping the competitive landscape. Developing and deploying AI involves a number of essential requirements, such as computing resources, data, and specialized manpower. Utilizing AI may also require additional investment in capital and technological expertise to enhance the functions and services. Accordingly, financial and technological capabilities may raise entry barriers for new competitors, acting as a structural factor that undermines competitive pressure in the market.

6. Given that the AI market features economies of scale, economies of scope, and network effects, vertical integration can provide firms with a head start over competitors. For instance, when launching AI services in the downstream market, firms that possess their own AI infrastructure and advanced AI models can reduce costs. Consequently, large firms capable of making substantial investments in infrastructure and model development are better positioned to compete.

7. In addition, vertically integrated firms can directly offer a variety of services by leveraging their proprietary foundation models, which enables them to collect user data themselves, thereby saving costs associated with purchasing or investing in data. Once they secure a large user base, they can further enhance their AI services and user experience, which in turn attracts even more users.

8. As such, deploying AI infrastructure is a critical component of the AI market. Once large-scale firms with these assets gain a competitive edge, they may create barriers to entry for new competitors.

3. AI-driven Competitive Dynamics and Constraints

3.1. Limited Access to Essential Elements

9. Firms are swiftly integrating AI into their operations and launching AI services to reap AI-driven benefits, reduce costs, and generate added value. Some elements—such as computing resources, data, and foundation models—are essential for rolling out AI-based products and services. Limited access to these elements can restrict market competition.

10. Businesses in the upstream AI market that own infrastructure and foundation models may pursue an open innovation strategy by sharing computing resources or providing open-source access to their foundation models, which can increase user dependence on their products and create procompetitive effects that lower entry barriers. In contrast, firms may expand into the downstream market through vertical integration, adopting a closed innovation strategy to foreclose competitors and substantially restrict access to cloud computing and AI models. This can allow them to leverage dominance in the upstream market into the downstream market. Coupled with lock-in effects, high dependence on these essential elements may undermine downstream business operations and reduce competitive pressure.

3.2. Coercive Bundling

11. Bundling is a market strategy in which primary products or services are sold together with secondary ones. This practice is commonly observed in the downstream AI market—for example, the Microsoft 365 and Windows OS suite bundled with the AI service Copilot. Bundling can incentivize firms with vertical integration that offer multiple services, making it a common competitive strategy.

12. However, coercive bundling—cases in which firms with significant dominance in the market for primary products or services force their business partners to purchase secondary products—can harm competition in the market for secondary goods and services. When coupled with network effects, which are particularly pronounced in the AI market, such practices can further increase the influence of dominant players. This is likely to enhance their market power and restrict consumers' freedom of choice, while raising concerns that competitors in the market for secondary goods and services are deprived of the opportunity to supply their products.

3.3. Fraudulent Inducement of Consumers

13. Firms employ various strategies and tools to secure and retain consumers. With the advancement of AI, algorithms are increasingly used in the downstream market for product search and recommendation systems to attract users. These algorithms can have procompetitive effects, helping consumers discover products more efficiently by learning from diverse data, including user preferences, transaction and sales records, and product reviews and ratings. However, there are growing concerns that these algorithms can be designed to prioritize particular products or favor firms' own offerings. Algorithms may also be fed biased data, or their results may be manipulated by firms. Such practices can distort consumers' decision-making and undermine fair competition.

14. In 2024, the KFTC took action against an e-commerce platform for fraudulent inducement of consumers. The platform manipulated search algorithms to boost the ranking of its own products, including private labels, misleading consumers into believing these products were superior to those with lower rankings. The KFTC concluded that this constituted exploitation of consumers through deceit.

15. Starting in February 2019, the firm secured top visibility for at least 64,250 of its products using machine-learning algorithms. The investigation found that the firm disregarded organic search results—which factored into conversion rates, prices, and product reviews—and manipulated the rankings at the final stage of the algorithm, known as "twiddling," where rankings are adjusted and modified. The Commission imposed remedies and a provisional fine of KRW 140 billion and referred the case to the Prosecution.

16. As demonstrated in this case, AI algorithms can be used to restrict market competition and limit consumers' ability to make informed decisions. Going forward, there is a risk that firms could leverage more sophisticated and advanced AI technologies to foreclose competitors and deny consumers the right to choose.

3.4. Cartels Involving AI-based Pricing[1]

17. AI technologies also influence pricing strategies across many markets. Dynamic pricing, a prominent example, considers big data, real-time supply and demand monitored through algorithms, current competitive conditions, consumer behavior, and more. Previously employed in limited sectors—such as aviation, accommodations, and real estate auctions—it has now expanded into diverse areas as new business models emerge, including e-commerce platforms and Online-to-Offline (O2O) services. When integrated with AI technologies, dynamic pricing enables increasingly sophisticated and advanced methods of price setting by analyzing consumer behavior and purchasing patterns, as well as through self-supervised learning.

18. Dynamic pricing can contribute to competition by facilitating more efficient decision-making among market participants. It provides customized services for target consumer groups in each industry and reflects market conditions in real time. At the same time, concerns have been raised regarding coordinated conduct involving AI algorithms.

19. Algorithm-applied pricing is not inherently problematic. However, there are anticompetitive risks, such as firms using algorithms to enter into or monitor collusive agreements, or engaging in coordination by employing similar algorithms. Furthermore,

[1] OECD, *Background Note on Algorithmic Competition* (2023); Ariel Ezrachi and Maurice E. Stucke, *Algorithmic Collusion: Problems and Counter-Measures* (OECD, 2017)

advanced AI technologies heighten concerns over AI-induced collusion, including cartels that result from firms' learning, predicting, and responding to rivals' behaviors through their own algorithms, as well as collusive actions unintentionally caused by algorithms' self-supervised learning. There is a growing call for in-depth discussion to develop cartel-detection systems that both reflect the characteristics of different types of algorithmic collusion and demonstrate a high level of expertise in AI technologies. Against this backdrop, the KFTC's 2025 policy research is underway to thoroughly analyze and explore countermeasures against AI-facilitated cartels.

4. Conclusion

20. In the AI market study conducted by the KFTC in 2024, firms surveyed emphasized the importance of AI services, stating that "*AI services play a core role in delivering value to users by enabling the application of high-functioning AI technologies*" and "*Generative AI-based services applicable in a wide range of areas are essential to enhance industrial competitiveness*." Moreover, more than 90 percent of firms responded that the downstream AI market is "*competitive (or somewhat competitive),*" where AI is applied to offer a variety of services. As firms increasingly view AI as a necessity rather than an option for enhancing competitiveness, AI transformation across industries is expected to accelerate further, with AI technologies exerting growing influence on downstream market competition.

21. However, as discussed above, potential anticompetitive risks in the upstream AI market may reduce competition in the downstream AI market. In addition, new competition issues may emerge depending on how AI technologies are applied.

22. Because diverse strategies deployed by AI firms can produce both procompetitive and anticompetitive effects, competition authorities must examine their roles and determine appropriate responses to maximize procompetitive outcomes through technological innovation while preventing anticompetitive harms.

23. While closely monitoring the AI market to prevent unfair and anticompetitive practices, the KFTC will intensify efforts to create a fair and level playing field that fosters continuous industrial innovation. The Commission will establish industry-specific AI-based monitoring systems to detect key issues and suspicious behaviors, thereby strengthening antitrust surveillance and providing input for future policymaking. The existing regulatory framework will also be refined to address new types of antitrust conduct emerging in the AI market, with laws, notices, and guidelines revised or enacted in a timely manner when necessary. Finally, the KFTC will work to raise awareness of the value of competition in the AI market to deter potential anticompetitive conduct and will enhance cooperation and coordination with overseas counterparts in addressing AI-related issues across jurisdictions.