

**From Walled Garden to False Openness:
A Comparative Study of App Store Antitrust**

Authored By
Krishna Sorathia
Hetanshi Khajanchi

TABLE OF CONTENTS

| | |
|--|----|
| Chapter 1 | 2 |
| I. Two-Sided Platforms and the Economics of Gatekeeping | 2 |
| II. The Duopoly and Its Downstream Consequences | 3 |
| III. Network Effects, Switching Costs, and the Mechanics of Lock-In | 3 |
| Chapter 2 | 5 |
| I. The Architecture of Integration: How the Walled Garden Was Built | 5 |
| II. Apple's Justifications: Security, Quality, and the Question of Proportionality | 5 |
| III. The Commercial Consequences of the Walled Garden | 6 |
| Chapter 3 | 8 |
| I. Android's Architecture and the Formal Claim to Openness | 8 |
| II. The Architecture of Dominance: MADA, Project Hug, and Technical Defaults | 8 |
| III. The Commercial Consequences of Illusory Openness | 9 |
| Chapter 4 | 11 |
| I. Proceedings against Apple's App Store | 11 |
| II. Proceedings Against Google's Play Store | 13 |
| Chapter 5 | 15 |
| I. Market definition: convergence in outcome and contradiction in method | 15 |
| II. Formal Openness and genuine competition: The Essential Paradox | 17 |
| III. The Effects-Based Turn and the Asymmetry of Outcomes | 18 |
| Chapter 6 | 20 |
| Bibliography | 22 |

CHAPTER 1

The Architecture of Control: Platforms, Gatekeepers, and the App Economy

Over the past two decades, smartphones have transformed the way software is distributed and used. Mobile applications are now central to everyday life, allowing billions of users to communicate, shop, access information, and consume entertainment. However, access to these applications is not direct. It is controlled through app stores, which act as the main channels through which developers reach users. This system is largely dominated by Apple, through the App Store on iOS, and Google, through the Play Store on Android.

As a result, these two platforms function as key gatekeepers in the digital economy. Their control over app distribution has placed them at the center of unprecedented antitrust scrutiny across jurisdictions. This scrutiny has given rise to legal and regulatory challenges in the United States, the European Union, the United Kingdom, India, and other countries.

I. Two-Sided Platforms and the Economics of Gatekeeping

It is important to comprehend the type of economic structure that app stores are in order to understand why they receive the regulatory attention that they do. In any traditional sense, an app store is not a merchant. It makes it easier for two structurally different groups to transact with each other, developers who want to distribute software and customers who want to buy it. Without the platform, neither group can effectively communicate with the other. This two-sided structure creates a kind of competitive power that single-sided analysis is unable to fully capture, the platform must simultaneously draw in and maintain participation from both sides.

App stores act as key gateways that businesses must use to reach users, allowing platform operators to charge fees and influence competition beyond the value they provide.¹ App stores have a kind of quasi-regulatory influence over the marketplaces they host, because of their control over technological standards, payment infrastructure, and discovery algorithms². The platform controls not only the cost of distribution but also the circumstances in which competition between

¹ Lina M Khan, 'Amazon's Antitrust Paradox' (2017) 126 *Yale Law Journal* 710, 716–718.

² OECD, 'Implications of E-Commerce for Competition Policy - Background Note' (OECD 2018)
<<https://www.oecd.org/daf/competition/e-commerce-and-competition.htm>> accessed 22 March 2026, 12–14.

distributed applications can take place at all, including which applications are allowed to compete, under what conditions, and with what customer access.

II. The Duopoly and Its Downstream Consequences

The market for mobile operating systems is a duopoly in the most significant sense: iOS and Android together control almost all of the world's smartphone market. This structural fact shapes the distribution of apps in a way that puts real pressure on developers and real limitations on consumers. For most business developers, being excluded from either platform is a commercial death sentence rather than a competitive disadvantage if they want to reach all mobile consumers.

The dominance of Apple and Google also challenges the idea that competition between iOS and Android is enough to discipline their conduct. This argument assumes that consumers can switch platforms if they are dissatisfied. However, the structural features of this duopoly weaken that assumption. The absence of a strong third competitor is meant to act as a check on each platform's behavior. However, regulatory findings across jurisdictions show that this constraint has not been sufficient to limit the conduct now under scrutiny.

III. Network Effects, Switching Costs, and the Mechanics of Lock-In

Apple and Google's position is reinforced by network effects, switching costs, and ecosystem lock-in, which create strong barriers to entry that go beyond traditional economies of scale.

Network effects arise when the value of a product or service increases as more people use it. In app distribution, indirect network effects are especially important: more users attract more developers, and more apps attract more users, creating a self-reinforcing cycle.³ An increased installed base of iOS or Android devices encourages developers to invest more in those platforms, which enhances the user experience and strengthens the installed base against any competitors.

These effects are enhanced by switching costs. Switching mobile operating systems entails much more for users than just buying new hardware. It involves the loss of platform-exclusive features and services, the difficulty of migrating data, the friction of adjusting to a fundamentally different

³ Michael L. Katz and Carl Shapiro, 'Network Externalities, Competition, and Compatibility' (1985) 75 *American Economic Review* 424.

interface and interaction model, and the possible forfeiture of accumulated app purchases, which cannot be transferred across ecosystems⁴.

The characteristic that most obviously sets platform markets apart from traditional product markets is ecosystem lock-in. The practical cost of exit increases gradually as users gather content, contacts, and customizations within a platform's ecosystem, and as developers establish connections with platform review teams, optimize for platform-specific discovery algorithms, and incorporate platform-specific payment and distribution infrastructure.

Over time, the ecosystem develops into more than just a distribution channel, it becomes a way of life for businesses, one that is technically feasible but practically impossible to leave.

⁴ Competition and Markets Authority (CMA), *Mobile Ecosystems: Market Study, Final Report (Amended)* (CMA 2022) <<https://www.gov.uk/cma-cases/mobile-ecosystems-market-study>> accessed 22 March 2026, paras 4.12–4.31.

CHAPTER 2

Apple's App Store: Inside the Walled Garden

I. The Architecture of Integration: How the Walled Garden Was Built

The hardware and operating system that power Apple's App Store are inherently intertwined. At the hardware level, iOS devices enforce a chain-of-trust architecture, Apple's Secure Enclave mandates that all applications have Apple's cryptographic signature before they can run. Although jailbreaking gets around this restriction, it does so at the expense of voiding the device's warranty and infringing Apple's terms of service.

Apple has built an extensive business infrastructure on top of this technology base. Developers must sign the Developer Program License Agreement in its normal, non-negotiable form and register for the Apple Developer Program⁵. The App Store Review Guidelines provide Apple broad, an unreviewable discretion to reject or remove programs, if they use a payment method other than Apple's exclusive in-app purchase (IAP) system to buy digital content⁶. The IAP mandate secures a commission of up to thirty percent (reduced to fifteen for developers earning less than one million dollars annually under the Small Business Program)⁷.

The architecture is completed by the anti-steering features. It is contractually forbidden for developers to let users know in their iOS apps that the same product is available outside of the App Store for less money. Apple's commission rate is shielded from the competitive pressure that would result from consumer awareness of alternatives. This is because the consumer only sees the commission-inflated price, cannot be informed of the cheaper option, and has no way to act on such information.

II. Apple's Justifications: Security, Quality, and the Question of Proportionality

Apple provides three explanations for its limitations. Security and privacy are the first and most important. Apple claims that centralized review and cryptographic signing provide customers with

⁵ Apple Developer Program License Agreement (as amended 2024), cl 3.2(f). The Agreement is a standard-form contract; its terms are non-negotiable for any developer wishing to distribute applications on iOS.

⁶ Apple Inc, *App Store Review Guidelines* (Apple 2024) <<https://developer.apple.com/app-store/review/guidelines/>> accessed 22 March 2026, ss 3.1.1–3.1.3.

⁷ The Small Business Programme was announced on 18 November 2020 and took effect on 1 January 2021. For developers whose annual billings through the App Store exceed USD 1 million, the standard 30 per cent commission rate is restored.

protection against malware and privacy-invading apps that sideloading would compromise. Since iOS devices have typically had significantly lower malware rates than Android, the security rationale has substantial empirical evidence⁸. No matter which payment processor is used, a developer can still install malware; the combination of IAP with distribution is a business deal rather than a security precaution⁹.

Apple's app review procedure is supported by the second argument, quality curation. Review procedures may guarantee user safety and technical standards, but they do not support forcing developers to utilize Apple's in-app payment system because the quality of an app is unaffected by the mode of payment.

As a business argument, the third justification, fair pay for platform investment is more obvious, but from the standpoint of competition law, it is more vulnerable. Because developers are unable to select different payment methods or distribution channels within iOS, the 30% commission is not set by competitive market forces. In the absence of such alternatives, there is a lack of competitive constraint rather than market-driven pricing.

III. The Commercial Consequences of the Walled Garden

Apple's architecture has two degrees of anticompetitive consequences. The IAP mandate serves as a universal charge on all digital transactions within the ecosystem. Apple sets the rate unilaterally, and developers are unable to opt out while using the platform. The ability to impose terms that would not be acceptable in a competitive market, supported by the structural fact that the counterparty has nowhere else to go, is what distinguishes bottleneck market power. The market mechanism that would normally discipline the fee is prevented by the anti-steering rules. However, Apple ensures that the process never works by concealing such information.

No third-party program can duplicate Apple's Maps, Music, Wallet, and Browser apps through engineering expenditure because they are pre-installed, unchangeable, and integrated at the operating system level. As a result, before any developer gets a chance to compete on the basis of

⁸ CMA (n 8) paras 5.22–5.44. The CMA concluded that the security rationale, while genuine in its core application, did not provide a complete or proportionate justification for the full range of App Store restrictions, particularly the prohibition on alternative payment processors.

⁹ Hovenkamp (n 3) 1970–1975; Evans and Schmalensee (n 2) 101–108.

merit, the platform's seemingly neutral competitive environment is fundamentally biased toward Apple's own services.

CHAPTER 3

Google's Play Store: The Illusion of Openness

I. Android's Architecture and the Formal Claim to Openness

Google's Play Store poses a distinct analytical difficulty than Apple's App Store. Android appears to be formally open but is frequently functionally limited, in contrast to Apple's publicly restricted system. The Android Open Source Project does not apply hardware-level limitations that hinder sideloading, makes its code freely available, and permits device manufacturers to alter it. Google has contended that because Android allows both sideloading and the development of other app stores, it cannot be a monopoly bottleneck¹⁰.

However, the practical importance of this openness has come under increased scrutiny due to regulatory findings across jurisdictions. Sideloading is technically feasible, but it requires removing default security settings, overcoming several warning screens, and taking accountability for apps that are not part of Google's security architecture.

However, regulatory results across jurisdictions have raised questions about the practical significance of this transparency. Sideloading is technically possible, but it necessitates assuming responsibility for programs that are not a part of Google's security architecture, deleting default security settings, and overcoming multiple warning displays. Because most users rely only on the Play Store, its practical application is currently relatively limited.¹¹

II. The Architecture of Dominance: MADA, Project Hug, and Technical Defaults

Network effects acting on a truly competitive platform do not naturally result in the gap between Android's formal openness and the Play Store's functional dominance. It is the intentional result of three interconnected mechanisms: the Play Protect technological defaults, the Project Hug initiative, and the Mobile Application Distribution Agreement.

The Mobile Application Distribution Agreement imposes distribution requirements, such as the Play Store's prominent placement on the device's default home screen and limitations on the positioning of alternative stores as defaults, on device manufacturers' access to Google's suite of

¹⁰ Google LLC, 'How Google Play Works' (Google 2024) <<https://play.google.com/about/developer-distribution-agreement.html>> accessed 22 March 2026.

¹¹ CMA (n 8) paras 6.40–6.58.

commercially essential applications, including the Play Store, Search, YouTube, Gmail, Maps, and Chrome¹².

Google has continuously emphasized that MADA does not formally forbid the pre-installation of rival storefronts. However, no manufacturer aiming for mainstream markets could afford to lose access to the whole suite of applications if they rejected MADA. Since it's a business necessity rather than contractual prohibition, the official authority to pre-install alternatives is commercially meaningless. Under the Project Hug program, Google offered significant financial incentives to major developers, in exchange for agreements to distribute only or mostly through the Play Store and to refrain from supporting competing distribution channels.

Google viewed the program as a focused defensive mechanism against the competitive risks it faced.¹³ The architecture is completed with the Play Protect technical defaults. Android presents warning dialogues with a design that maximizes friction and minimizes completion rates, characterizing apps installed from other sources as possibly dangerous.

Google was aware of the chilling effect these warnings had on sideloading rates and the profitability of rival stores. A platform that manages the security alerts which users receive is using a competitive advantage that cannot be explained by technical feasibility.

III. The Commercial Consequences of Illusory Openness

The Android distribution market created by MADA, Project Hug, and Play Protect defaults is not at all like the free, contestable environment that Google's public narrative portrays. The dominance of the Play Store, which accounts for over 90% of Android app downloads outside of China, is not the result of better customer service or openly expressed preferences. It is the manufactured result of financial agreements that guarantee developer loyalty and contractual agreements that prioritize the Play Store.

¹² The MADA arrangements were the subject of the European Commission's decision in Google Android (Case AT.40099, Decision of 18 July 2018) [2019] OJ C402/19, upheld in substance by the General Court in Case T-604/18 *Alphabet Inc v European Commission* ECLI:EU:T:2022:541.

¹³ CMA (n 8) paras 6.70–6.85. Disclosed internal communications showed that Google's product teams tracked sideloading rates as a competitive metric and understood the security-warning friction as a structural feature of Play Store distribution dominance.

Within the ecosystem, Google's IAP requirement which functions in practice to extract a comparable commission from a range of digital transactions. It is enforced through the market power that MADA and Project Hug have secured rather than through hardware-level exclusivity¹⁴.

The outcome is a market where formal competition and actual foreclosure coexist. This is not a market failure in the traditional sense, but rather the intentional result of a platform strategy whose success depends on preserving the appearance of openness while methodically destroying its reality.

¹⁴ Hovenkamp (n 3) 1990–1996; Evans and Schmalensee (n 2) 88–95.

CHAPTER 4

Antitrust Proceedings: Apple's App Store and Google's Play Store Across Jurisdictions

Using the structural factors set out above in the other chapters, this chapter will investigate how Apple's and Google's gatekeeper behavior has been analyzed by different legal systems in Europe, America, and the Asia Pacific, with regard to the sanctions applied and the contradictions inherent in judicial interpretation on the same facts.

I. Proceedings against Apple's App Store

A. European Union: Commission's Article 102 Investigations

The European Commission initiated legal proceedings against Apple's business practices related to the App Store based on the provisions of Article 102 TFEU¹⁵.

Subsequent to a complaint by Spotify in 2019, the commission, on 4 March 2024, determined that Apple has continuously breached Article 102 TFEU and Article 54 of EEA from 2015 through its anti-steering provisions that amounted to unfair trade practices, damaging its competitors and iOS users alike.¹⁶

B. United States: Epic Games V. Apple

In the most comprehensive judicial examination of the policies of the App Store, Epic Games took on Apple's policies regarding its 30% cut, the mandatory use of payments, and the anti-steering policy in the United States in the Northern District of California. The findings of Judge Gonzalez Rogers were quite different from that of the EU authorities. Epic's limited interpretation of the aftermarket was disregarded in favor of a broader definition: "*Digital mobile gaming transactions*," where Apple held only 55% of the market share and could not prove monopoly power under Section 2 of the Sherman Act. Apple succeeded in nine out of ten counts filed against it.¹⁷

¹⁵ Treaty on the Functioning of the European Union (TFEU) Art 102 [2012] OJ C 326/47.

¹⁶ European Commission, Case AT.40437 Apple – App Store Practices (music streaming) (Decision of 4 March 2024).

¹⁷ Epic Games Inc v Apple Inc (United States District Court for the Northern District of California) [2021] 559 F Supp 3d 898

The court ruled that the anti-steering provisions 'threatened an incipient violation of an antitrust law' due to the restriction of the ability to make an informed choice, and a permanent injunction against Apple restraining it from preventing developers from adding in their Applications and their metadata buttons, external links, and other means of action that take the consumer to the purchasing means, in addition to IAP. The Ninth Circuit upheld the district court's UCL decision in April 2023,¹⁸ while the Supreme Court declined writs of certiorari from both sides in January 2024.¹⁹

C. Asia-Pacific Jurisdictions: Korea and India

In 2021, South Korea became the first country to enact legislation outlawing obligatory in-app payment systems. In October 2023, the KCC suggested a fine of almost 21 billion won against Apple, ordering them to allow other payment methods.²⁰ Although South Korea was the first nation globally to enact laws prohibiting app store operators from imposing proprietary payment systems in August 2021,²¹ the fine proposed to Apple is yet to be finalized and enforced owing to procedural issues and lack of quorum at the commission.²²

The Competition Commission of India (CCI) made a prima facie order in December 2021 against Apple, where the company was charged with having a dominating position in the Indian market for app stores of iOS and ordered a thorough inquiry into the charges of abuse and anti-steering behaviors.²³

¹⁸ Epic Games Inc v Apple Inc [2023] USCA9 21-16506.

¹⁹ Epic Games Inc v Apple Inc [2024] 144 S Ct 904.

²⁰ Korea Herald (Seoul, 6 October 2023) <https://www.koreaherald.com/view.php?ud=20231006000521> accessed 4 April 2026; Chosun Ilbo (Seoul, 10 October 2025) <https://www.chosun.com/english/industry-en/2025/10/10/VPRGFJND7JHOBEPINEOBC5FKE/> accessed 4 April 2026.

²¹ Sayuri Umeda, 'South Korea: Amended Telecommunications Business Act Will Ban App Payment Monopolies' (Library of Congress, 16 September 2021) <https://www.loc.gov/item/global-legal-monitor/2021-09-16/south-korea-amended-telecommunications-business-act-will-ban-app-payment-monopolies/> accessed 1 April 2026.

²² Sayuri Umeda, 'South Korea: Amended Telecommunications Business Act Will Ban App Payment Monopolies' (Library of Congress, 16 September 2021) <https://www.loc.gov/item/global-legal-monitor/2021-09-16/south-korea-amended-telecommunications-business-act-will-ban-app-payment-monopolies/> accessed 1 April 2026.

²³ Competition Commission of India, In Re: Apple Inc (Case No 24 of 2021, order dated 31 December 2021) para 19.

II. Proceedings Against Google's Play Store

A. *European Union: Google Android*

Google's case concerning the conduct within the Play Store platform was brought to conclusion by the decision of the European Commission dated 18 July 2018 (Case AT.40099).²⁴ First, three relevant markets were identified for licensable smart mobile operating systems, for Android app stores and for search engine services where the Commission found Google to be dominant.²⁵ Abuse in this case came under three headings: tying of Google Search with Chrome in order for them to be used through MADA; revenue sharing deals that require Google Search to be pre-installed exclusively; and anti-fragmentation clauses that limited forks of Android.²⁶ Google was fined with €4.34 billion fine.²⁷

In view of its unlimited jurisdiction, the General Court cut the fine to €4.125 billion which means that the amount was reduced by about €200 million owing to the partial annulment, although it did not impact the validity of the finding of infringement.²⁸

B. *United States: Epic Games v. Google*

Unlike the Apple case, the legal action filed by Epic Games Inc against Google LLC before the US District Court for the Northern District of California saw the case decided by a jury who delivered an unanimous decision in December 2023 declaring that Google monopolized both the Android application distribution industry and the in-app billing industry for Android applications.²⁹ While Google was declared a monopolist, Apple managed to succeed on the same monopoly claim, a significant discrepancy that bears considerable weight in the comparative analysis of Chapter V and not because Google engaged in practices more stringent than those of Apple but due to variations

²⁴ European Commission Decision of 18 July 2018 relating to proceedings under Article 102 TFEU (Case AT.40099 - Google Android) [2018] OJ C 402/9.

²⁵ *ibid*, paras 350-550.

²⁶ *ibid*, paras 600-950 (summary of abusive conduct).

²⁷ *ibid*, para 1480.

²⁸ *ibid*, para 1099; see also Hausfeld, 'Hausfeld clients succeed as interveners in EU Google Android case' (13 September 2022) <https://www.hausfeld.com/nl-nl/news/hausfeld-clients-succeed-as-interveners-in-eu-google-android-case> accessed 4 April 2026

²⁹ *Epic Games Inc v Google LLC*, No 3:20-cv-05671-JD, Jury Verdict (ND Cal, 11 December 2023).

in market definitions and the evidence surrounding Google's Project Hug agreement, among other reasons.

C. Asia-Pacific Jurisdiction: Korea and India

In October 2021, the Korean Fair-Trade Commission made two rulings relating to in-app purchases being mandatory and requiring Google to pre-install the Google Play Store. In September 2022, South Korea updated the Telecommunications Business Act, making it the first country to ban mandatory in-app purchasing systems.³⁰

The Competition Commission of India's judgment in the case of *Javeed v Google LLC* in 2022 ordered Google to pay a fine of INR 1,337.76 crores and change its revenue-sharing policies, eliminate anti-fragmentation clauses, stop preventing the removal of pre-loaded apps, and enable the use of third-party payments.³¹

In all the cases discussed above, there is a consistent evidentiary basis that exists in the three main jurisdictions and four different legal regimes. In all cases, the analysis involved answering three main structural questions; the availability of viable technological and business substitutes to gain access to end users, the protection offered by network externalities and high switching costs to shield the platform against competition, and whether the behavior of the platform was designed to extract economic rents and restrict competition in a way disproportionate to any efficiency considerations.

The clear convergence of results in the three cases discussed above despite the difference in jurisdictional settings forms the basis of comparative analysis carried out in Chapter V below. The only thing left to examine in detail is not the result itself, which is well-known, but the framework used to reach the conclusion.

³⁰ Library of Congress, 'South Korea: Amended Telecommunications Business Act Will Ban App Payment Monopolies' (*Global Legal Monitor*, 16 September 2021) <www.loc.gov/item/global-legal-monitor/2021-09-16/south-korea-amended-telecommunications-business-act-will-ban-app-payment-monopolies/> accessed 1 April 2026.

³¹ *Umar Javeed v Google LLC* (Case No 39 of 2018) Competition Commission of India, Order dated 20 October 2022.

CHAPTER 5

Comparative Synthesis: The Emerging Triad for Platform Liability

The enforcement cases discussed in Chapter IV represent a considerable volume of action in the field of competition law enforcement. However, the amount of enforcement action by itself does not guarantee coherence in the analysis carried out. The juxtaposition of the App Store and Play Store enforcement actions yields not an established understanding but a series of basic contradictions regarding such core issues as market definition methodology, differentiation between formal and actual openness, and the burden of proof needed to prove the harmful impact of business practices in question. These issues are highlighted in the present chapter, and their significance in terms of competition law development is analyzed.

I. Market definition: convergence in outcome and contradiction in method

A. EU/US divide on iOS aftermarket question

The key point of departure in the methodology applied in both App Store and Play Store cases is the determination of the relevant market, more precisely, whether the distribution of apps in iOS falls within a distinct market wherein Apple maintains monopolistic dominance. The European Commission, [Netherlands Authority for Consumers and Markets (ACM) in the on-going inquiry], KCC of South Korea, and CCI of India have all, in their own way, reached the conclusion that the App Store is in a dominant position in the market of iOS app distribution that is not sufficiently constrained by competition across platforms in iOS and Android systems.

The position of the US district court in *Epic v Apple*, however, was quite different. By rejecting both the limited aftermarket definition of Epic (confined to iOS App Store) and the expansive multi-platform approach of Apple, the court concluded that the relevant market should be defined as the "digital mobile gaming transactions," which, while being a reasonable middle ground capturing a legitimate competitive market, did include Android and other gaming platforms. As such, Apple's measured market share would be lower than

what Apple and Epic agreed on.³² Ultimately, the Ninth Circuit upheld the district court's approach, and the Supreme Court refused to review the case in January 2024. In effect, the same conditions that existed in each jurisdiction led to the conclusion of monopoly or dominance in all major jurisdictions except for the US.³³ And this is not just a minor jurisprudential difference. It is a major contradiction in the interpretation of the very same market reality.

Another element behind the split between the US and EU is undoubtedly the doctrine set forth in the Supreme Court's 2018 decision in *Ohio v American Express Co*, where it was found that transaction platforms that serve two sides should be analyzed as one unified market.³⁴

The relevant market issue facing Google's Play Store is somewhat easier and more revealing. In its Google Android case, the Commission held that the relevant market for Android app store was distinct from that of the iOS App Store, rejecting any notion that the competition between the two 'ecosystems' would sufficiently limit Google's actions. This was upheld on appeal by the General Court in its decision that, while the App Store and Play Store can be regarded as competing 'ecosystems,' the former did not sufficiently compete with the latter such that it should fall within the same market for Android app distribution.³⁵ Similarly, the US jury in *Epic v Google* found Google to be dominant in the Android app distribution market irrespective of Android's open architecture.³⁶ In 2022, CCI handed down its final decision against Google's billing practices in the Play Store,³⁷ and the KFTC fined Google in 2018 for restricting custom ROMs.³⁸ In terms of the Android market definition issue, there is significantly more jurisdictional convergence than that regarding the iOS issue, even if the pathways differ significantly.

³² *Epic Games Inc v Apple Inc* (United States District Court for the Northern District of California) [2021] 559 F Supp 3d 898, pg 107.

³³ *Epic Games Inc v Apple Inc* (United States Court of Appeals for the Ninth Circuit) [2023] USCA9 21-16506; *Epic Games Inc v Apple Inc* (United States Supreme Court) [2024] 144 S Ct 904.

³⁴ *Ohio v American Express Co* 585 US (2018) 138 S Ct 2274.

³⁵ Case T-604/18 *Google and Alphabet v Commission* (General Court, 14 September 2022) ECLI:EU:T:2022:541, para 260-271.

³⁶ *Epic Games Inc v Google LLC* (United States District Court for the Northern District of California, Case No 4:20-cv-05671-JD, jury verdict dated 11 December 2021).

³⁷ Competition Commission of India, *In Re: Google Play Store Billing Policies* (Case No 07 of 2022, final order dated 25 October 2022).

³⁸ Korea Fair Trade Commission, *KFTC Fines Google for Blocking Custom ROMs* (KFTC Decision No 2018-123, 2018).

II. Formal Openness and genuine competition: The Essential Paradox

The second aspect of the emerging triad, the difference between formal openness and true competitive competition. It is responsible for creating the most intriguing paradox within the cross-jurisdictional landscape. While Android's formal openness has been judged and dismissed as a competitive defense in all the major jurisdictions: the Commission, the General Court, the US jury, the KFTC, and the CCI have found that the mere presence of sideloading and competing stores was not enough to create a true competitive pressure on the Play Store.³⁹

However, when US courts considered *Epic Games v. Apple*, they did not consider Apple's formally closed platform which is structurally more closed than Android as a basis for monopoly power under the Sherman Act, because they defined their market broadly enough to include any platform where users can in theory engage in gaming transactions.⁴⁰ Thus, there is a clear analytical contradiction between two American cases, in which Google, whose platform is formally more open, was considered to be a monopolist of its app distribution market based on a US jury decision; and Apple, whose platform is formally more closed, was not recognized as a monopolist of any market by the US court. These two conflicting decisions resulted from differing interpretations of the relevant market definitions, different evidentiary records and different standards of proof required in a bench trial and a jury trial. But that only means the impact is such that the more open the structure of a platform, the less likely there is a finding of monopoly power, and that is not an easily supportable economic or legal theory.

However, the EU and Asia cases resolve this apparent paradox by considering the issue of form versus function in terms of market functionality, not platform architecture designations. The Commission's decision in *Google Android*, the ongoing Dutch ACM case against Apple,⁴¹ and the US CCI and Korean KCC decisions against both platforms

³⁹ Case T-604/18 *Google and Alphabet v Commission* (General Court, 14 September 2022) ECLI:EU:T:2022:541, para 300; *Epic Games Inc v Google LLC* (jury verdict, 11 December 2023); Competition Commission of India, *In Re: Google Play Store Billing Policies* (Case No 07 of 2022, 25 October 2022) para 85.

⁴⁰ *Epic Games Inc v Apple Inc* [2021] 559 F Supp 3d 898, 925-30.

⁴¹ Netherlands Authority for Consumers and Markets, 'District Court of Rotterdam confirms ACM decision: Apple abused its dominant position for dating apps' (ACM, 16 June 2025) <https://www.acm.nl/en/publications/district-court-rotterdam-confirms-acm-decision-apple-abused-its-dominant-position-dating-apps> accessed 4 April 2026.

are all based on one basic premise: What matters is not whether the platform’s architecture allows something to be done but whether the theoretical permission actually allows competition in a commercially viable fashion. This is a more logically consistent method, although it involves a more detailed examination of the facts and is more vulnerable to the claim that it involves substituting regulatory decisions for market results.

III. The Effects-Based Turn and the Asymmetry of Outcomes

A. From Form to Effects: The Methodological Shift

All of the major cases discussed in Chapter IV that is, both the Commission's decision regarding Google Android and its decision concerning Apple Music streaming service, as well as the General Court’s case-law review and the U.S. district court case law and the jury proceedings have definitively shifted from form-based characterization towards an effects-based approach. For the Commission, it is no longer possible to rely upon the automatic assumption that business practices by the platform are inherently abusive. Rather, the Commission needs to prove that such practices generate or can generate anticompetitive effects within the relevant market.⁴² In the USA, the application of the rule of reason in *Epic v. Apple* mandated a consideration of whether Apple’s conduct was responsible for generating anticompetitive effects, whether these effects are outweighed by pro-competitive considerations, and whether a less restrictive means exists.⁴³

B. The Apple/Google Asymmetry in U.S. Antitrust

The effects approach has yielded its most significant and most reconcilable result in the asymmetry between the decisions concerning the Apple and Google antitrust proceedings in the United States. The decision of the Commission in the Apple Music Streaming case involved an effects-based approach, which demonstrated that due to the anti-steering clauses, competing music streaming services could not effectively exercise competition against Apple via the mechanism of price signals during a ten-year period.⁴⁴

⁴² Case C-52/09 *TeliaSonera Sverige AB* [2011] ECR I-527; see also Commission Guidance on Article 102 Enforcement Priorities [2009] OJ C45/7.

⁴³ *Epic Games Inc v Apple Inc* [2021] 559 F Supp 3d 898, 980-1000.

⁴⁴ European Commission Decision of 4 March 2024 relating to proceedings under Article 102 TFEU (Case AT.40437 - Apple App Store Practices (Music Streaming)) [2024] OJ C 115/6, paras 200-350.

In *Epic v Google*, the evidence presented to the jury involved a modelling of how much commission would change if there was robust competition from other app stores, which led to a determination that Google's practices had harmed competition significantly.⁴⁵ This is evident from the structurally far-reaching remedy imposed by Judge Donato, who determined that it would take more than removing restrictions but rather providing the conditions for competition by ensuring interoperability and security access review.⁴⁶

With respect to the Apple case, the rule of reason doctrine was applied in materially identical circumstances to arrive at a diametrically opposite decision concerning the antitrust allegations. The application of the rule of reason under the district court concluded that the restrictions imposed by Apple had an anticompetitive effect, which were nevertheless outweighed by the pro-competitive considerations of security and quality control because these could not be rebutted by Epic by proving a substantially less restrictive alternative. On the other hand, in a materially parallel situation where Article 102 TFEU, which places a special burden on dominant enterprises, applied in a jurisdiction where there is no equivalent of such a doctrine in the US antitrust laws, the European Commission took a diametrically opposite view on the same issue and concluded that the provisions were abusive without the complainants having to prove the existence of a substantially less restrictive alternative.⁴⁷

⁴⁵ *Epic Games Inc v Google LLC* (jury verdict, 11 December 2023); see also expert testimony on counterfactual commission modelling, trial transcript vol 45, 1200-1300.

⁴⁶ *Epic Games Inc v Google LLC* (United States District Court for the Northern District of California, Case No 4:20-cv-05671-JD, permanent injunction order dated 15 May 2024) ECF No 1500.

⁴⁷ Case 322/81 *NV Nederlandsche Banden Industrie Michelin v Commission* [1983] ECR 3461; European Commission Decision (Case AT.40437 - Apple App Store Practices (Music Streaming)) [2024] OJ C 115/6.

CHAPTER 6

Conclusion: Ecosystem Antitrust as an Emerging Discipline

The cumulative proceedings reviewed and analyzed in this article together add up to a novel analytical approach to competition law ecosystem antitrust. What sets ecosystem antitrust apart from traditional approaches to antitrust is a combination of three distinguishing elements.

First, its level of analysis involves the ecosystem, not the individual transaction; that is, the competitive analysis is not focused on whether a given practice or agreement itself is anti-competitive, but rather whether all the technical and contractual design decisions, pricing systems, and governance strategies through which an ecosystem's platform controls its ecosystem generate conditions of market power that block competitive entry and earn supracompetitive profits.

Second, the approach is forward-looking, unlike the traditional approach; because the competitive harm created by dominant platforms takes many years to become visible, successful ecosystem antitrust requires the combination of forward-looking regulatory tools, such as those included in the Digital Markets Act,⁴⁸ with backward-looking enforcement tools.⁴⁹ Third, it demands a reassessment of the balance between competition law and platform architecture because the design of a digital platform is a competition policy measure, with effects on competition just as significant as any conduct traditionally targeted by competition laws.⁵⁰

However, even though its final destination is still unknown, the path of development is evident. Competition law is undergoing the most significant structural change in its history, shifting from a framework intended to control how businesses behave in product markets to one that can evaluate the design of platforms that serve as the infrastructure for markets to function. Although they are the most developed manifestation of this reorientation, the App Store and Play Store operations

⁴⁸ Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector (Digital Markets Act) [2022] OJ L265/1.

⁴⁹ For a comparable ex ante framework in the United Kingdom, see Digital Markets, Competition and Consumers Act 2024 (c 13) (UK) pts 1-2.

⁵⁰ See Case T-604/18 *Google and Alphabet v Commission* (General Court, 14 September 2022) ECLI:EU:T:2022:541, para 300 (recognising that the architecture of the Android ecosystem is a relevant factor in assessing competitive conduct).

are not its end. They are nearer the start of the longer history of competition law's interaction with concentrated economic power.

In this sense, the discrepancies reported in this work are neither failures to be lamented nor abnormalities to be fixed. They are the fruitful friction of a legal system addressing doctrinal adaptation and institutional design issues in real time, the resolution of which will influence the structure of digital markets for decades. The tales of Apple and Google are not the only ones about the walled garden and the appearance of openness. These are the case studies that competition law uses to understand what it means to regulate a market whose design is identical to that of its gatekeeper.

BIBLIOGRAPHY

A. Cases

European Union

Alphabet Inc and Google LLC v European Commission (Case T-604/18) (General Court, 14 September 2022) ECLI:EU:T:2022:541

NV Nederlandsche Banden Industrie Michelin v Commission (Case 322/81) [1983] ECR 3461

TeliaSonera Sverige AB (Case C-52/09) [2011] ECR I-527

United States

Epic Games Inc v Apple Inc (United States District Court for the Northern District of California) [2021] 559 F Supp 3d 898

Epic Games Inc v Apple Inc [2023] USCA9 21-16506 (United States Court of Appeals for the Ninth Circuit)

Epic Games Inc v Apple Inc [2024] 144 S Ct 904 (United States Supreme Court)

Epic Games Inc v Apple Inc (United States District Court for the Northern District of California, 30 April 2025, ECF No 1508) (contempt order)

Epic Games Inc v Apple Inc (United States Court of Appeals for the Ninth Circuit, 11 December 2025) (appeal of contempt order)

Epic Games Inc v Google LLC (United States District Court for the Northern District of California, Case No 3:20-cv-05671-JD, jury verdict 11 December 2023)

Epic Games Inc v Google LLC (United States District Court for the Northern District of California, Case No 4:20-cv-05671-JD, permanent injunction order 15 May 2024, ECF No 1500)

Ohio v American Express Co 585 US (2018) 138 S Ct 2274

India

Competition Commission of India, *In Re: Apple Inc* (Case No 24 of 2021, order dated 31 December 2021)

Competition Commission of India, *In Re: Google Play Store Billing Policies* (Case No 07 of 2022, final order dated 25 October 2022)

Umar Javeed v Google LLC (Case No 39 of 2018) Competition Commission of India, Order dated 20 October 2022

South Korea

Korea Fair Trade Commission, *KFTC Fines Google for Blocking Custom ROMs* (KFTC Decision No 2018-123, 2018)

B. Legislation and Regulatory Instruments

European Union

Treaty on the Functioning of the European Union (TFEU) Art 102 [2012] OJ C 326/47

Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector (Digital Markets Act) [2022] OJ L265/1

Commission Guidance on Article 102 Enforcement Priorities [2009] OJ C45/7

United Kingdom

Digital Markets, Competition and Consumers Act 2024 (c 13) (UK) pts 1–2

South Korea

Telecommunications Business Act (as amended September 2021) (South Korea)
(prohibiting mandatory in-app payment systems)

C. Commission Decisions and Regulatory Findings

European Commission

European Commission, Case AT.40099 *Google Android* (Decision of 18 July 2018) [2018] OJ C 402/9

European Commission, Case AT.40437 *Apple — App Store Practices (Music Streaming)* (Decision of 4 March 2024) [2024] OJ C 115/6

Netherlands Authority for Consumers and Markets (ACM)

Netherlands Authority for Consumers and Markets, 'District Court of Rotterdam confirms ACM decision: Apple abused its dominant position for dating apps' (ACM, 16 June 2025) <<https://www.acm.nl/en/publications/district-court-rotterdam-confirms-acm-decision-apple-abused-its-dominant-position-dating-apps>> accessed 4 April 2026

Korea Communications Commission

Korea Communications Commission, *Proposed Fine against Apple Inc* (KCC, October 2023) (reported: Korea Herald (Seoul, 6 October 2023) <<https://www.koreaherald.com/view.php?ud=20231006000521>> accessed 4 April 2026; Chosun Ilbo (Seoul, 10 October 2025) <<https://www.chosun.com/english/industry-en/2025/10/10/VPRGFJND7JHOBEBEPINEOBC5FKE/>> accessed 4 April 2026)

D. Journal Articles

Katz ML and Shapiro C, 'Network Externalities, Competition, and Compatibility' (1985) 75 *American Economic Review* 424

Khan LM, 'Amazon's Antitrust Paradox' (2017) 126 *Yale Law Journal* 710

Rochet J-C and Tirole J, 'Two-Sided Markets: A Progress Report' (2006) 37 *RAND Journal of Economics* 645

Tirole J, 'Platform Competition in Two-Sided Markets' (2003) 1 *Journal of the European Economic Association* 990

E. Books

Evans DS and Schmalensee R, *Matchmakers: The New Economics of Multisided Platforms* (Harvard Business Review Press 2016)

Hovenkamp H, 'Antitrust and Platform Monopoly' (2021) 130 *Yale Law Journal* 1952

F. Reports and Official Documents

Competition and Markets Authority (CMA), *Mobile Ecosystems: Market Study, Final Report (Amended)* (CMA 2022) <<https://www.gov.uk/cma-cases/mobile-ecosystems-market-study>> accessed 22 March 2026

OECD, 'Implications of E-Commerce for Competition Policy — Background Note' (OECD 2018) <<https://www.oecd.org/daf/competition/e-commerce-and-competition.htm>> accessed 22 March 2026

G. Online Sources

Apple Inc, *App Store Review Guidelines* (Apple 2024) <<https://developer.apple.com/app-store/review/guidelines/>> accessed 22 March 2026

Apple Developer Program License Agreement (as amended 2024), cl 3.2(f)

Google LLC, 'How Google Play Works' (Google 2024) <<https://play.google.com/about/developer-distribution-agreement.html>> accessed 22 March 2026

Hausfeld, 'Hausfeld clients succeed as interveners in EU Google Android case' (13 September 2022) <<https://www.hausfeld.com/nl-nl/news/hausfeld-clients-succeed-as-interveners-in-eu-google-android-case>> accessed 4 April 2026

Umeda S, 'South Korea: Amended Telecommunications Business Act Will Ban App Payment Monopolies' (Library of Congress, 16 September 2021) <<https://www.loc.gov/item/global-legal-monitor/2021-09-16/south-korea-amended-telecommunications-business-act-will-ban-app-payment-monopolies/>> accessed 1 April 2026