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Epic Games: Nineteen Eighty-Fortnite

At the most basic level, we're fighting for the freedom of people who brought smartphones to install apps from sources of their choosing, the freedom for creators of apps to distribute them as they choose, and the freedom of both groups to do business directly.

— Tim Sweeney, Founder and CEO of Epic Games[1]

The guiding principle of the App Store is to provide a safe, secure and reliable experience for users and a great opportunity for all developers to be successful but, to be clear, when it comes to striking the balance, Apple errs on the side of the customer.

— Douglas G. Vetter, VP & Associate General Counsel of Apple Inc.[2]

Epic Games took the video gaming world by storm with its hit title *Fortnite*, a blockbuster success that could be played across multiple platforms, from PC to console and eventually to mobile devices. Since Epic Games launched the "battle royale" game on the Apple iOS App Store and the Google Android Play Store in 2018, *Fortnite* had been installed nearly 150 million times, generating global in-app spending of over $1.2 billion. On the back of *Fortnite*'s cross-platform success, Epic landed a private valuation of $17.3 billion after raising nearly $1.8 billion from strategic investors such as Sony and financial investors such as BlackRock, Fidelity, and T. Rowe Price in August 2020.[3] *Fortnite*'s underlying technology Unreal Engine, the infrastructure software that Epic licensed to third parties, powered more than 7.5 million user enterprises inside and outside of the gaming industry. Despite their success, Epic Games founder and CEO Tim Sweeney long expressed discontent with the dominance of Apple and Google in mobile app distribution. Sweeney frequently called for a revolutionary change.[4]

On August 13, 2020, amid heightened tension between the tech giants and global regulatory authorities, Sweeney initiated a battle royale with Apple (and Google) that would likely last for years and could change the whole industry. Before dawn that day, Epic introduced a direct payment system in its game *Fortnite* for both iOS and Android mobile devices. The unauthorized payment processing circumvented the 30% revenue share agreement mandated by iOS App Store and Google Play policies. Later that morning, Apple and Google promptly removed *Fortnite* from their storefronts, citing Epic's violation of guidelines. And by that afternoon, Epic filed a lawsuit, clearly prepared in advance,

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alleging that Apple and Google engaged in monopolistic practices in the mobile app distribution and in-app payment processing markets.[5]

Most observers, along with Sweeney and Epic, focused their attention on the case against Apple, with the Google case continuing as a relative sideshow. Did Sweeney make the right move by challenging Apple in this way at this time? Would Epic prevail in court against Apple? Could Sweeney find a way to achieve his goals through avenues other than a lawsuit? What would Apple be willing to concede, if anything? Would this battle royale change the rules of the mobile application ecosystem? What would this mean for cloud technology and other digital marketplaces of the future?

Epic Games

Origin Story

Tim Sweeney founded Epic Games in 1991 from his childhood bedroom.[6] Sweeney sold games he developed to players he found online and published his first commercial video game *ZZT* in 1991. Since then, Sweeney and Epic developed and published iconic games *Doom* (1993), *Quake* (1996), the *Unreal* franchise (began in 1998), the *Gears of War* franchise (began in 2006), the *Infinity Blade* series (began in 2010), and *Fortnite* (2017).

Unreal Engine

Following the growing popularity of the first-person shooter (FPS) genre, Epic published a series of games after the release of *Unreal* in 1998. It then began to license *Unreal*'s underlying game engine, Unreal Engine, to other game developers. With the releases of Unreal Engines 2 (2002), 3 (2006), 4 (2014) and imminent Unreal Engine 5 (2021), updates and improvements continued for years. Epic did not charge a subscription fee for Unreal Engine and made it free for non-commercial use in 2015, charging a 5% royalty on commercial applications that generated at least $3,000 quarterly revenue. In 2020, Unreal Engine became free-to-use until a game earned $1 million in gross revenue. Sweeney underscored its importance to Epic: "If we didn't have the engine, we would have died. We would have died three times."[7]

A game engine was the core technology that acts as the backbone for video game development. Developers used the software packages in a game engine to generate complex video effects, animations, scenes, environments, and other visual content. The two most popular game engines were Unreal and Unity Engines. They both evolved to offer more comprehensive tools across multiple platforms, including PC, console, mobile, and VR/AR (see **Exhibit 1** for platform ecosystems for video gaming). Outside of gaming, industries such as film, television, architecture, sports, and automotive all used Unreal Engine for 3D rendering and special effects generation.

Unreal Engine led in market share among triple-A game developers/publishers with its leading real-time 3D rendering and high graphics capabilities.[8] Besides Epic's own games like *Fortnite*, other developers like Ubisoft used Unreal Engine to develop franchises such as *Brothers in Arms* (2005) and *Tom Clancy* (2002–2013) before it began building its own engine in-house. More recent games developed on Unreal Engine included *PlayerUnknown's Battlegrounds* (*PUBG*) (2017), *Gears 5* (2019), *Kingdom Hearts 3* (2019), and *Minecraft: Dungeons* (2020).

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Fortnite

Epic originally released *Fortnite* as a player-versus-environment genre game and released the "battle royale" game mode in July 2017. *Fortnite*'s popularity meteorically rose, with the user count reaching 30 million by the end of 2017. Epic achieved full cross-platform play for *Fortnite* users across mobile, PC, Microsoft's Xbox, Sony's PlayStation, and Nintendo Switch after reaching an agreement with Sony in September 2018 (see **Exhibit 2** for *Fortnite* registered users count by platforms). As of August 2020, *Fortnite* had more than 350 million players, 144 million downloads and generated over $1.2 billion from mobile users since its initial launch on the App Store and Google Play Store.[9] Streaming and esports also thrived in the context of *Fortnite*. An October 2019 event had more than 7 million concurrent views across streaming platforms. *Fortnite* was the most-viewed game on YouTube and the second-most on Twitch. The prize pools during the 2018 and 2019 seasons for *Fortnite* competitions were in aggregate $100 million, with the victor of Epic's own *Fortnite* World Cup taking home $30 million.

Fortnite's "battle royale" mode featured survival gameplay in which up to 100 players were dropped on a map, with players fighting to be the last one standing. The game was free to download and play, but using the "V-bucks" virtual currency, users could purchase aesthetic in-game digital items (that did not provide any competitive advantage): costumes, avatars, tools, dance moves, and special game modes. *Fortnite* later introduced another monetization feature called the "Battle Pass," a once-a-major-update payment that enabled players to complete tasks in exchange for exclusive in-game items.[10] By some estimates, *Fortnite* brought in $1.8 billion revenue in 2019 and $2.4 billion in 2018 through such in-game microtransactions (MTX); advertising made up a relatively small fraction of *Fortnite* revenue. Mobile platforms contributed a relatively moderate portion of Epic's revenue (see **Exhibit 3** for *Fortnite* mobile revenue compared to total revenue). However, *Fortnite*'s dominance on the iOS platform remained impressive: in December 2018 alone, it generated over $40 million in revenue, far surpassing rival games, and was frequently the App Store's top-earning game (see **Exhibit 4** for *Fortnite*'s iOS revenue compared to other games). *Fortnite*'s popularity remained strong into the summer of 2020: gamers spent over $46 million on mobile in the month prior to its removal from the Apple's App and Google's Play Stores.[11]

For 2020, Epic was rumored to have forecasted $5 billion in revenue, largely driven by *Fortnite*, after having achieved its highest-ever revenue of $4.2 billion in 2019.[12] *Fortnite* was rumored to have generated $400MM in sales during the span of the pandemic alone.

Epic Games Store

Following *Fortnite*'s meteoric success, Epic launched its own PC game storefront, Epic Games Store, in December 2018 to compete primarily with Valve's Steam store. Epic Games Store charged a 12% commission from revenue generated by external developers through first-time game sales and in-game transactions. For developers using Unreal, Epic waived the engine loyalty fee, making Epic Games Store more lucrative than Valve's Steam to developers. Steam, on the other hand, employed a 30%, 25%, or 20% split, depending on a game's gross revenue. Sweeney justified the entrance of Epic Games Store into the PC games store marketplace as a means to facilitate competition and drive value for developers. "Stores charging 30 percent are marking up their costs by 300 percent to 400 percent," Sweeney claimed, and "[Epic] aims to give developers a better deal."[13]

Sweeney and Epic were especially transparent on its arrival to 12% as the store's fee. In an interview in 2020 with Bloomberg, Sweeney explained:

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> We know the costs of operating a store… [it's] 5-7% of revenue for Epic, and Apple and Google have way, way higher economies of scale… you can break down the cost by component… payment processing is 2.5-3% in major developed economies, as much as 6-8% in developing economies, bandwidth is 1-1.5%, customer service 1-1.5%... so we're able to charge 12% and make a 5-7% profit margin for ourselves. It's not altruistic, this is a great business.[14]

The Epic Games Store embodied two principles of Sweeney and Epic. First, there should be competition between marketplaces to lead to "fair" pricing for developers. In 2019, Valve's Steam storefront had an estimated 75% market share in global PC games distribution.[15] The introduction of Epic Games Store and its 12% fee compelled Valve to replace its flat 30% fee with a tiered revenue sharing system just days after. The competition provided by Epic Games Store could push Valve's fees, however marginal, in the desired direction.

Second, platforms should exist to serve third-party developers and content creators. With origins as a game developer, Sweeney defined a true content platform as one through which content creators and developers generated most of the profit earned across a given platform.[16] In other words, if the owner of the digital games storefront or app store itself earned more profits than the developers of a store's content, then it was not a true platform. By introducing a 12% take rate where 30% was the norm, Epic Games Store's fee was also a step in the right direction for Sweeney.

Metaverse

For many years, Sweeney advocated for his vision of a Metaverse encompassing all virtual worlds, augmented reality, the Internet's social networks, and digital economies. Some believed video gaming was the ideal starting point and the closest manifestation of the vision, with games such as *Fortnite*, *Roblox*, and *Minecraft* at the forefront: virtual environments that prioritized the creation of an economic infrastructure supporting user-generated content. As venture capitalist Matthew Ball described, the Metaverse was "the newest macro-goal for many of the world's tech giants… the express goal of Epic Games… the driver behind Facebook's purchase of Oculus VR" and the reason for the "tens of billions that will be spent on cloud gaming over the next decade… [because] such technologies will underpin our online-offline future."[17]

While no one could predict what a Metaverse would eventually look like, advocates agreed on its fundamental characteristics: the Metaverse would be persistent, synchronous, interoperable, feature an underlying economy, and have mass developer involvement. In 2020, Sweeney described his vision:

> No one knows exactly what the Metaverse will be... the Metaverse is going to be a real-time 3D social medium, where instead of sending messages and pictures to each other asynchronously, you're together with them in a virtual world and interacting and having fun experiences which may span from purely games to purely social experiences. Another critical element of the Metaverse, it is not just built by one mega corporation. It's going to be the creative work of millions of people who can each add their own elements to it through content creation, programming and design... it will be a massively participatory medium of a type we haven't really seen yet.[18]

Antitrust Challenges to Apple and Google

As lawmakers and regulators in both the United States and Europe probed into the question of whether the tech giants unfairly used their market power, Epic publicly spoke out against Apple and

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Google. Early on, Sweeney criticized the App and Play Stores at the Devcom Developer Conference in 2017. He described the app economy as "a market failure" and described the app stores' high fee to developers as "a parasitic loss."[19] Since June 2019, the U.S, Justice Department increasingly scrutinized the owners of "market-leading online platforms" such as Facebook, Apple, Amazon, and Google.[20] Within the mobile operating systems (OS) marketplace, the debate focused on three topics: whether competing application marketplaces were allowed, whether alternative payment systems were allowed, and whether fees of the original payment system or marketplace were fair. To be eligible for app distribution on Apple's App Store and Google's Play Store, developers were required to participate in their corresponding Developer Programs and abide by various developer account policies. Developers needed to agree to these policies to distribute their apps on iOS /Android devices and use Apple/Google developer tools. Over the years, Apple safeguarded the App Store by enforcing stringent policies that banned apps deemed offensive or legally questionable. This included apps that violated data collection rules (Onavo Protect), spammed users with ads and non-reliable information (Corona 100m), or helped users evade law enforcement (PhantomALERT).

Google

Public criticism and regulatory scrutiny over Google's app distribution market had been less intense than that against Apple. Unlike Apple's iOS ecosystem, which forbids the installation of apps that were distributed through avenues other than the App Store itself, Google had a more open mobile app distribution platform that made alternative app stores available and sideloading apps possible. Epic initially released *Fortnite* for Android devices as an installer app downloadable outside of the Play Store in 2018, effectively bypassing Google Play's 30% cut of in-app transactions. Netflix and Spotify also previously skirted Google's cut by using their own in-app direct payment system.[21]

Epic and Google were once in a similar disagreement to the one between Epic and Apple. In December of 2019, Google rejected Epic's intent to distribute *Fortnite* through the Play Store without its own payment system. Android had enabled non-Play Store app marketplaces in its ecosystem; however, app store parity with regards to user experience was less definitive. To Epic, a less friendly user-experience that accompanied non-Play Store app stores was by Google's design. According to Sweeney, "Google puts software downloadable outside of Google Play at a disadvantage, through technical and business measures such as scary, repetitive security pop-ups for downloaded and updated software..."[22] 18 months later, Epic eventually yielded and launched the app through the Google Play Store. Sweeney further commented, "We hope that Google will revise its policies and business dealings in the near future, so that all developers are free to reach and engage in commerce with customers on Android and in the Play Store through open services, including payment services, that can compete on a level playing field."[23]

U.S. tech giants such as Google faced antitrust scrutiny from the European Union (EU) as early as 2009. However, investigations typically took years to complete, and generally resulted in fines if anything. In 2017, a $2.7 billion fine on Google's online shopping practices was issued after a seven-year-long investigation, contributing to a total fine of over $9 billion across three antitrust cases. Antitrust investigators also raised concerns with Android and mobile app charges, which led to Google's agreeing to revamp its practices accordingly. Though anticompetitive allegations had not been focused on Google's Play Store but rather its advertising, search, and data collection businesses, the European Commission (EC) also levied fines on Apple's tax avoidance in 2016. The EC further reinforced the necessity of rigorous competition and regulation for the tech giants.[24] During the U.S. congressional hearing in 2020, while most complaints against Google focused on the search engine, lawmakers grilled Apple CEO Tim Cook on App Store services.

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Apple

The App Store became a priority business segment for Apple under CEO Tim Cook, who succeeded Steve Jobs in 2011.[25] On the company's earnings call in early 2016, Cook said,

> We started breaking out services [which contained App Store revenue], as you know, in the beginning of fiscal year 2015. And as that business has grown and as it became clear to us that the investors wanted — investors and analysts wanted — more visibility into that business, we've now elected to break it out and show the full size, scope, growth, and make comments on the profitability of it from a transparency point of view.
>
> I do think that the assets that we have in this area are huge, and I do think that it's probably something that the investment community would want to and should focus more on.[26]

Cook's vision of transitioning Apple from a hardware company to a services company was onset by signs of slowing iPhone sales growth. Over the last decade, Apple's services category saw the most significant growth. Revenue from the services category alone grew 33% to nearly $40 billion during the fiscal year of 2018, consolidating its position as the company's primary growth driver. Compared to the gross margin of just under 30% in Apple's products business which included the iPhone, the services division enjoyed gross margin in excess of 60% in the first quarter of 2019.[27] With the coronavirus lock-down as a tailwind, services revenue hit a record high for the first quarter of 2020.[28] The App Store proved to be a major source of services' profits; one analyst described it as a "cash cow" generating an estimated $13.8 billion in revenue in 2018 and $18.3 billion in 2019, accounting for nearly 40% of Apple's total services revenue[a].[29] Gaming applications reportedly made up three-quarters of App Store revenue (see **Exhibit 5** for average iOS in-app spending per user by category).[30]

Apple generated direct revenue from paid downloads since launching the App Store in 2008. A year later, Apple added the "in-app purchase" (IAP) feature for paid apps and started taking a 30% cut for upfront app sales while "free apps remain[ed] free."[31] In 2011, by restricting the App Store's payment processing to its own in-app purchase system, a new monetization model prevailed: all in-app digital goods and services purchased went through the Apple channel. Among all transactions, in-app purchase for subscriptions was the core aspect which drew attention from antitrust regulators in 2020.[32] Back in 2008, the 30% commission through the App Store caused little dissent. Apple may have chosen a 30% fee by drawing on the precedent of the iTunes Store, which had a similar 70/30 revenue-sharing scheme with both major and independent music labels. One analyst postulated that 30% was settled to compete against the 35% commission charged for movie views by cable TV companies at the time of the iTunes Store.[33] Many platforms would eventually mimic the App Store's 30%. Google Play, Samsung Galaxy Store, and other video game digital marketplaces adopted a similar fee structure charging 30% of upfront and in-app transactions.[34] Sweeney, however, launched Epic Games Store with a unique 88/12 revenue-sharing scheme: "It's time for change. In the early days of Steam, 70 / 30 [percent cut] was a revolutionary split because you could compare it to 70 / 30 in favor of the retailer."[35]

Early Complaints An early antitrust complaint against the App Store came from consumers in 2011 who filed a class-action lawsuit on the basis of Apple's monopolistic power over the iOS app distribution platform and pricing structure. The lawsuit alleged that the 30% commission from developers resulted in inflated app prices. A Supreme Court ruling in May 2019 granted consumers

[a] Apple only disclosed how much it paid to developers but not the total amount of revenue it generated from the App Store. The estimated figure here assumed that *all* developers received 70% of app sales.

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the right to sue Apple for its practices over the distribution of apps and the potential effects on app developers' pricing decisions.[36] The case was sent to lower courts for further investigation.[37]

Major companies had been reluctant to pay the 30% "Apple tax". Netflix and Spotify initially complied with the charge but later reneged. Others like Amazon removed the in-app purchase capability entirely. While Apple maintained the exclusivity of the transaction channel through its own payment system, accusations against Apple escalated. Spotify stopped supporting Apple's in-app payment system for new users in 2016, and Netflix made a similar decision in 2019.[38] In the same year, Spotify filed a formal antitrust complaint to the EU, accusing Apple's purposeful behavior of promoting its own competing music streaming service and limiting consumer choice.[39] Apple defended its operations:

> The App Store is a safe, secure platform where users can have faith in the apps they discover and the transactions they make, and developers, from first-time engineers to larger companies, can rest assured that everyone is playing by the same set of rules.[40]

While other companies sought to bypass Apple's in-app purchase rules, blatant confrontations were rare. The CEO of ProtonMail, an encrypted email service app restricted by Apple, commented, "If you're not in the App Store today, you're not online. Your business cannot function. So they're the gatekeepers of something that every single company wants…"[41] Epic also paid the commission fees required by Apple's App Store since March 2018 to make *Fortnite* available on iOS devices. Sweeney said it only did so because of the App Store's strictly closed system.[42] "It's time for change…Visa and Mastercard process transactions for 3 percent on average," Sweeney said, "Apple, Google, and Android manufacturers make vast, vast profits from the sale of their devices and do not in any way justify the 30 percent cut."[43]

Rising Attention in 2020 In January 2020, a diverse set of companies including Tile, Sonos, PopSockets, and Basecamp collectively testified in front of the U.S. Congress, citing Apple's bullying tactics and dominance over online marketplaces.[44] In the EU, complaints from Spotify, Rakuten, and others accumulated over the years, and the EC launched a formal investigation over the App Store's allegedly anticompetitive practices.[45] The complaints claimed that Apple's commission provided an unfair advantage favoring Apple's own products and services such as Apple Music.[46] Apple responded with its previous argument: "At the end of the day, our goal is simple: for our customer to have access to the best app or service of their choice, in a safe and secure environment."[47]

Companies such as Match Group (the owner of dating apps like Tinder and Hinge) and Basecamp became more outspoken in their frustrations with the App Store.[48] Match Group criticized Apple for "squeez[ing] industries like e-books, music and video streaming, cloud storage, gaming and online dating," and added, "We're acutely aware of their power over us."[49] Basecamp CEO Jason Fried joined other executives testifying in front of Congress earlier in 2020: "We don't pay Apple 30% and never will… the whole thing is ridiculous. It's very anticompetitive."[50] Hey.com, a Basecamp service, created a website page titled "Apple vs. Hey" to feature the company's disagreements with Apple. The website featured tweets that logged the story of Apple's rejection of an update of Hey.com which required users to purchase subscriptions through a webpage external to the app. David Hansson, the co-founder of Basecamp, concluded, "…We can't run a business wrestling Google with one arm and Apple with the other. It's just too much."[51]

As tensions heightened between Apple, App Store customers and developers, and regulatory authorities by July 2020, Sweeney became more prolific on Twitter. In response to Apple's defensive claim that its services safeguarded user security, he said, "The iOS App Store's monopoly protects only Apple profit, not device security."[52] In response to Apple's most recent changes to the App Store's

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guidelines, Sweeney observed, "Apple just moved a few of the mazes they trap developers in."[53] He strongly urged for iOS and Android to open up "as truly open platforms…to ensure a competitive, healthy, and fair app economy."[54] Sweeny challenged Apple's rule on behalf of all developers in his response to Apple's claim of maintaining "a level ground field":

> To me, this means: All iOS developers are free to process payments directly, all users are free to install software from any source. In this endeavor, Epic won't seek nor accept a special deal just for ourselves.[55]

Congressional Hearing More than 22 years after Microsoft CEO and founder Bill Gates testified in Congress to defend Microsoft against claims of anticompetitive behavior around Internet Explorer,[56] on July 29, 2020, the House Judiciary Committee's antitrust subcommittee opened another hearing for the CEOs of Apple, Amazon, Facebook, and Google, marking the culmination of years of antitrust scrutiny against the tech giants. Though Apple's practices were the subject of less scrutiny than the others, a congressperson specifically targeted the App Store for its market power in app distribution and treatment of app developers. The day before the hearing, Sweeney quoted a small game developer's tweet, citing Apple and Google's 30% app store commission as part of the platforms' "terribly unfair and exploitative" business model: "They come off the top, before funding any developer costs. As a result, Apple and Google make more profit from most developers' games than the developers themselves."[57]

Cook defended the App Store's locked-down system and the fee it charged by claiming it ensured "a safe and trusted place."[58] His opening statement compared the rates across other stores and videogame marketplaces and found the App Store to be comparable.[59] He cited the enormous opportunities provided to developers by the App Store's growth and noted, "If Apple is a gatekeeper, what we have done is open the gate wider."[60] He claimed that the App Store protected its users and treated developers equally: "The App Store guidelines ensure a high-quality, reliable, and secure user experience. They are transparent and applied equally to developers of all sizes and in all categories." However, Congress cast doubt on these claims at the antitrust hearing, citing Apple's unfair treatment of apps to shut out competition and retaliate against developers who publicly objected its policies (see **Exhibit 6** for a summary of Cook's testimony).[61]

Declaration of War

In an email to Apple's executives at 2:08 AM PDT on August 13, 2020, Sweeney announced Epic's plan to introduce a new direct payment option to *Fortnite* users that would skirt the App Store's 30% cut of in-game transactions. With the hotfix update on *Fortnite*'s in-app purchase system, users did not have to update their application to have access to the change, and Apple's App Store review team did not have to approve the update.[62] The new payment option offered players across all iOS and Android devices a permanent 20% discount on the game's virtual currency (V-bucks) if they opted to transact with Epic directly. Otherwise, they could pay the original price through either the Apple App Store or Google Play Store (see **Exhibit 7** for *Fortnite*'s direct payment option). Epic's direct payment system directly violated Apple policy: the App Store guidelines mandated that only Apple's IAP could be used for payment processing of digital goods and services.[63]

Banned

At 11:22 AM PDT on August 13, Apple removed *Fortnite* from the App Store. Google followed suit later that afternoon. Both companies issued statements condemning Epic's actions, but at the same time

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said they would welcome *Fortnite* back if Epic reverted to the original payment system. New users could no longer download *Fortnite* from the App and Play Stores, and existing users could no longer receive version updates.[b] That afternoon, Apple described the situation to the public:

> Today, Epic Games took the unfortunate step of violating the App Store guidelines that are applied equally to every developer and designed to keep the store safe for our users. As a result, their *Fortnite* app has been removed from the store. Epic enabled a feature in its app which was not reviewed or approved by Apple, and they did so with the express intent of violating the App Store guidelines regarding in-app payments that apply to every developer who sells digital goods or services.
>
> Epic has had apps on the App Store for a decade, and have benefited from the App Store ecosystem - including its tools, testing, and distribution that Apple provides to all developers. Epic agreed to the App Store terms and guidelines freely and we're glad they've built such a successful business on the App Store. The fact that their business interests now lead them to push for a special arrangement does not change the fact that these guidelines create a level playing field for all developers and make the store safe for all users. We will make every effort to work with Epic to resolve these violations so they can return *Fortnite* to the App Store. [64]

#FreeFortnite

Epic anticipated the ban and had lawsuits and a public relations campaign ready to go. Within hours of removal from the App Store, the company filed a 56-page lawsuit against Apple in the U.S. District Court for the Northern District of California (Epic Games v. Apple). Later that day, Epic filed a lawsuit on similar grounds against Google (Epic Games v. Google).

Lawsuit

Epic's lawsuit accused Apple of anticompetitive practices in the distribution of apps as well as payment processing on the App Store. The link to the full lawsuit document became publicly available through *Fortnite*'s Twitter account at 1:33 PM PDT, almost immediately after the ban.[65] Though the lawsuits' claims against Apple and Google's antitrust behaviors were similar, Epic emphasized that Apple's "unreasonable restraints", "total monopoly", and "unlawful contractual restrictions… foreclosed all direct competition."[66] In the lawsuit against Google, Epic highlighted Google's deliberate actions that disadvantaged non-Play Store apps, restricting competition and functionally making Android less of the open system that Google touted.[67] Before *Fortnite*'s ban, Epic generated a monthly average of $40 million in sales from Apple's App Store, compared to $3 million from Google Play.[68]

As its legal counsel, Epic retained Cravath Swaine & Moore, the same law firm that AT&T, Qualcomm, and American Express hired to defend themselves from antitrust allegations. For those cases, the respective courts sided with the defendants and concluded no antitrust violations. Having generally represented the side of consolidation and market power, Cravath sat on the plaintiff's side to challenge market power this time.[69]

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[b] *Fortnite* rolled out more than forty updates in 2019 alone, averaging to around three per month. Gamers valued frequent refreshed content from game developers.

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In the lawsuit, Epic did not seek monetary compensation from Apple and Google but rather an overhaul of the mobile platform systems. The filing extensively referenced the Sherman Antitrust Act of 1890,[c] the foundation of U.S. antitrust law.[70] It alleged that Apple had unlawful, monopolistic control over the iOS app distribution market and forced developers to abide by the App Store's technical and contractual restrictions. The lawsuit condemned the role of IAP as the sole digital content payment processing tool allowed by Apple for iOS apps. Finally, it claimed that the tying of the App Store and IAP was a *per se* violation of antitrust laws. As opposed to *rule of reason* violation, which most of anticompetitive actions fell under, Epic alleged that the "tying arrangement" itself was almost always illegal such that no further anticompetitive actions or market contexts were needed for a court to rule in Epic's favor.[71] As the complaint read:

> Apple is able to unlawfully condition access to the App Store on the developer's use of a second product—In-App Purchase—for in-app sales of in-app content. Through its Developer Agreement and unlawful policies, Apple expressly conditions the use of its App Store on the use of its In-App Purchase to the exclusion of alternative solutions in a per se unlawful tying arrangement.[72]

Nineteen Eight-Fortnite

In its fight against Apple, Epic Games also employed its massive user base with a marketing campaign that portrayed Apple as an all-powerful monopolist. At 1:22 PM PDT on August 13, shortly before the lawsuit went public, Epic released a video depicting *Fortnite* characters that burlesqued Apple's iconic "1984" television commercial, which portrayed IBM as a sinister "Big Brother." The parody depicted Apple as the modern-day "Big Brother" with an apple-faced man that loomed on the screen, boasting to a black-and-white, expressionless audience about the power they had harvested over time (see **Exhibit 8** for *Fortnite*'s parody video and Apple's original "1984" ad). A colored, heroine figure rushed into the scene carrying a pickaxe, throwing it at and shattering the screen, liberating the audience from its zombie-like state. The video ended with Epic's message about the "fight" it was in with Apple in an attempt to rally support from the greater than 350 million registered *Fortnite* players.[73]

On August 23, Epic launched a "#FreeFortnite Cup" tournament with prizes, exclusive apparel, and real-world snags for gathering users to "play one last battle royale across all platforms."[74] Along with the tournament, Epic encouraged broad use of the "FreeFortnite" hashtag and released digital assets parodying Apple's "Think Different" ad campaign for players to make their own virtual anti-Apple gear.[75] On August 26, Epic published a blog post titled "#FreeFortnite" that explained the mission of its fight with Apple.[76] An FAQ section updated players on the ban with direct links to its initial filings of the legal dispute.[77] The blog post also emphasized that Apple and Android mobile devices would not have access to the new Marvel-themed content scheduled to debut on August 27.

Many players were surprised and confused by the rapid turn of events. Some expressed disappointment in Epic, and others supported Epic's actions.[78] Two weeks in, there were nearly 200,000 posts across Facebook and Twitter mentioning the campaign, with YouTubers, Twitch streamers, and other *Fortnite* enthusiasts contributing.[79] Sweeney continued his media presence. He described Epic as

[c] The Sherman Antitrust Act of 1890 was a federal statute which prohibits activities that restrict interstate commerce and competition in the marketplace. Amended by the Clayton Act in 1914, § 1of the Act stated that "[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal." § 2 of the Act prohibited monopolization or attempts at monopolizing any aspect of interstate trade or commerce and makes the act a felony.

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leading a fight not only for itself but also for consumers and the entire creative industry, protecting the freedom of consumers to download apps and the freedom of developers to distribute apps.[80]

Apple Returns Fire

On August 14, Apple sent Epic a formal notice that Epic's membership in the Apple Developer Program was to be terminated and warned Epic had until August 28 to take actions accordingly. Terminating Epic's membership in the Program would prevent Epic from accessing its software-developer accounts associated with Ureal Engine and also block its third-party developer users from the App Store, including the makers of *Fortnite*'s competitor "battle royale" game *PUBG*.[81] While Epic long prepared for *Fortnite*'s removal, it was unclear whether Epic anticipated that Apple would try to block its developer tool as well. On August 17, Epic filed for a temporary restraining order that accused Apple of disproportionate retaliation. Epic claimed that such a move would cause "unquantifiable and irreparable" damage to its own business as well as its customers:[82] if Epic's access to these accounts were revoked, the larger developer community using Unreal Engine would also suffer.

On August 21, Apple filed opposition urging the Court not to grant Epic the temporary restraining order. It rejected Epic's definition of the market as limited to "iOS apps" and then opposed the claim of IAP's being a separate "tied" product. Apple drew reference from a former court ruling regarding Mac OS' being "an improper, single-brand market," and denied Epic's notion of "single-brand iOS Mobile App Distribution and iOS In-App Payment Processing Markets." Instead, it defined a competitive market to "include services 'reasonably interchangeable by [developers] for the same purposes'" and commented on the "multiple distribution channels available to [*Fortnite*] games, including other mobile app marketplaces, video game consoles, and personal and laptop computers." Apple concluded, "There is substantial evidence of competition among platforms on which *Fortnite* is played."[83]

IAP, in Apple's view, was not a separate product or market but "functions as Apple's digital checkout for the App Store—a payment gateway through which all purchases of digital content made within iOS apps and on the App Store are channeled and logged." Apple further claimed the App Store qualified as a "two-sided" transactional platform and IAP was "the fundamental mechanism" also implemented by other transaction platforms as part of the monetization process. "If developers can avoid the digital checkout, it is the same as if a customer leaves an Apple retail store without paying for shoplifted products."[84] Finally, Apple emphasized that Epic's move was part of a deliberate, avoidable plan, as *Fortnite* grew into a highly profitable gaming app inside the App Store.[85]

Apple Fellow Philip Schiller, who formerly oversaw Apple's App Store business, also filed a separate statement expressing his concern:

> If every developer is free to breach its contracts with Apple and allowed to circumvent the App review process, then Apple's App Store cannot deliver the many benefits to consumers and developers that it currently does.... And if developers can circumvent [in-app purchases] and avoid paying Apple the commissions it is contractually due, Apple will be unable to continue its on-going investment in it.[86]

Additional details emerged about series of emails between Sweeney and Apple executives prior to *Fortnite*'s ban. On June 30, upon Epic's last renewal of its Developer Program License Agreement, Sweeney initially requested permission from Apple for alternative payment processing and app installation options within *Fortnite*. Apple refused Sweeney's demands on July 10 with arguments

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citing its own guidelines as well as Sweeney's tweets. Sweeney followed up a week later expressing his firm disagreement, before eventually going rogue on August 13.[87]

Partial Reprieve

Epic soon filed a preliminary injunction that asked the Court for a temporary restraining order against Apple's "overbroad retaliation" towards Fortnite and Unreal Engine in an "unlawful effort to maintain its monopoly" that would cause "irreparable harms" to Epic itself and the broader ecosystem of game developers as the case awaited trail.[88] Epic also requested that its other developer tools be considered separate from the lawsuit. On August 24, a judge granted Epic's request to maintain its Apple developer credentials for Unreal Engine,[89] but the judge denied the request to bring *Fortnite* back to the App Store, citing Epic's deliberate breach of the App Store guidelines.[90] Thus, the temporary restraining order was settled in partial favor of both parties: *Fortnite* remained off the App Store, but the apps of developers using Unreal Engine would remain available and supported by Epic.[91] The Court decided:

> The Court finds that with respect to Epic Games' motion as to its games, including *Fortnite*, Epic Games has not yet demonstrated irreparable harm. The current predicament appears of its own making…
>
> By contrast, Epic Games has made a preliminary showing of irreparable harm as to Apple's actions related to the revocation of the developer tools (SDKs) [e.g., Unreal Engine]. The relevant agreement, the Apple Xcode and Apple SDKs Agreement, is a fully integrated document that explicitly walls off the developer program license agreement… For now, Epic International appears to have separate developer program license agreements with Apple and those agreements have not been breached…
>
> Thus, in focusing on the status quo, the Court observes that Epic Games strategically chose to breach its agreements with Apple which changed the status quo. No equities have been identified suggesting that the Court should impose a *new* status quo in favor of Epic Games. By contrast, with respect to the Unreal Engine and the developer tools, the Court finds the opposite result. In this regard, the contracts related to those applications were not breached. Apple does not persuade that it will be harmed based on any restraint on removing the developer tools. The parties' dispute is easily cabined on the antitrust allegations with respect to the App Store. It need not go farther. Apple has chosen to act severely, and by doing so, has impacted non-parties, and a third-party developer ecosystem. In this regard, the equities do weigh against Apple.[92]

More Shots

On August 28, Epic's developer account associated with *Fortnite* was officially terminated from the App Store. Sweeney retweeted the App Store's promotion of *Fortnite*-competitor *PUBG Mobile*, "While waiting for Apple to #FreeFortnite on iOS and Mac, here's another awesome battle royale game powered by Unreal Engine!"[93] On September 4, Epic filed another preliminary injunction. It reiterated Apple's unlawful behavior regarding the iOS distribution market and in-app payment processing along with four separate declarations in support of Epic's claim of Apple's monopolistic control of the iOS App Distribution Market (see **Exhibit 9** for a summary of arguments from Epic expert opinion on Apple). It also revealed in the primary filing that iOS users made up the largest segment of the *Fortnite* community. According to the document, "Daily active users on iOS have declined by over 60% since

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Fortnite's removal from the App Store" (see **Exhibit 10** for *Fortnite*'s monthly downloads and revenue before and after the ban).[94]

Epic directly opposed Apple's common defense of its closed system that the App Store ensured safety, alleging that Apple's "requiring all in-app purchases to go through IAP is facially pretextual." Epic also claimed it would be "ideally situated to challenge Apple's restrictions" as a "would-be direct competitor of Apple in the relevant markets, ready to offer competitive app distribution and competitive payment processing on iOS."[95] Apple countersued Epic on September 8 and responded to Epic's preliminary injunction on September 15. In addition to repeating previous arguments, Apple speculated Epic had taken calculated steps to "invigorate interest" in Epic's games and services, including *Fortnite*. It also cast doubt on Epic's demonstration of "irreparable harm" by arguing iOS users did not make up the majority of *Fortnite*'s revenue.[96] On September 10, Epic announced that Apple's sign-in system would no longer work for Epic's accounts starting September 11 and encouraged users to change credentials.[97] On September 28, Google updated developer guidelines to enforce the in-app purchase rule for apps listed on the Play Store and emphasized the requirement of using Google's own billing system.[98]

Following *Fortnite*'s ban, Epic's lawsuit, Apple's countersuit, and a failed motion for the temporary restraining order to bring *Fortnite* back onto the App Store, Epic still had a long road ahead. On September 24, Epic and Apple filed statements outlining their respective positions in an initial bench trial, which was scheduled to take place May 2021.[99] On October 11, Judge Yvonne Gonzalez Rogers reaffirmed her split decision on Epic's motion for a preliminary injunction against Apple following a hearing on September 28: developers using Unreal Engine would be able to list their apps on the App Store, but Apple had no obligation to bring back *Fortnite* (see **Exhibit 12** for a timeline of Epic's and Apple's legal actions).

Industry Reaction

While there were previous smaller feuds between app developers and the mobile platforms, Epic's conflict drew a new level of public attention. Spotify commended Epic's move, agreeing that "Apple's unfair practices have disadvantaged competitors and deprived consumers for far too long."[100] Match Group also sided with Epic: "We fully support Epic Games' efforts…to show how Apple uses its dominant position and unfair policies to hurt consumers, app developers and entrepreneurs."[101] News publishers such as the *New York Times, Wall Street Journal*, and *Washington Post* joined in, condemning the App Store's share of their subscriptions revenue.[102] Epic's battle against Apple's stewardship received other companies' sympathy: some publicly sided with Epic, while others remained reluctant to form a coalition.[103]

Facebook

Facebook and Apple openly criticized each other multiple times prior to 2020. Early in 2011, Apple banned Facebook from launching a competing store for web games through its built-in mobile website.[104] Apple had a particular interest in guarding IAP from third-party games distribution, as it was one of the App Store's most lucrative verticals. Consumer spending on mobile games reached $61.7 billion in 2019, of which 68% came from the App Store (see **Exhibit 11** for worldwide mobile game revenue).[105] Though historically known for setting strict rules for listing gaming apps or apps featuring games on the App Store, Apple launched its own premium subscription-based gaming service Apple Arcade in 2019. In August 2020, Apple forced Facebook to launch its gaming app without its gaming feature after rejecting release for months.[106] Facebook complained, "[Apple's restriction] is shared pain

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across the game industry, which ultimately hurts players and devs and severely hamstrings innovation on mobile for other types of formats, like cloud gaming."[107]

Tension between Apple and Facebook continued escalating amidst conflict between Epic and Apple. Facebook joined the cohort of companies criticizing the App Store's payment processing policy. On August 14, one day after *Fortnite*'s ban, Facebook rolled out a paid event feature that allowed small business owners to charge users for accessing their live video streams.[108] It openly spoke of how the "Apple tax" stifled its effort to help struggling small businesses during the pandemic by not waiving its 30% fee.[109] As the anti-App Store sentiment expanded, on September 25, Apple decided to make exceptions for Facebook online events along with teaching apps by allowing their own payment systems until the end of 2020. Games were left off the exception list. Facebook was not satisfied with the temporary reprieve.[110] Furthermore, the impending iOS 14 software launch that would predictably hurt one of Facebook's revenue streams could further intensify the conflict.[111]

Microsoft

After Apple threatened to disable the Epic's developer accounts, Microsoft filed a separate declaration in support of Epic's petition. As an Unreal Engine user for its mobile game *Forza Street*, Microsoft warned that restrictions on Epic could harm the greater game development community.[112] The statement pointed out that the ability to update and improve the game engine was of vital importance for the functionality of the projects running on it; uncertainty around Unreal's continuous support could cause an exodus of gamers and creators with a constant need for updates and bug fixes.

For Microsoft, the conflict bore existential implications for the future cloud gaming apps, which themselves contained and offered access to games through their own marketplaces for distribution of digital goods. Apple's arguments against *Fortnite*'s payment system and any external distribution platform were similar to its justification in restriction cloud gaming services such as Microsoft xCloud, Google Stadia, Nvidia GeForce Now, and Amazon Luna from the iOS ecosystem.[113] Microsoft had been forced to cut the testing of xCloud on iOS:

> Our testing period for the Project xCloud preview app for iOS has expired. Unfortunately, we do not have a path to bring our vision of cloud gaming with Xbox Game Pass Ultimate to gamers on iOS via the Apple App Store. Apple stands alone as the only general purpose platform to deny consumers from cloud gaming and game subscription services like Xbox Game Pass. And it consistently treats gaming apps differently, applying more lenient rules to non-gaming apps even when they include interactive content… We are committed to finding a path to bring cloud gaming with Xbox Game Pass Ultimate to the iOS platform. We believe that the customer should be at the heart of the gaming experience and gamers tell us they want to play, connect and share anywhere, no matter where they are.[114]

In 2011, Apple had banned OnLive, a high-profile startup that offered games running in cloud data centers.[115] Reportedly, Apple was originally excited by OnLive's cloud streaming feature and even encouraged a version of the app for Apple TV, but senior executives later abruptly rejected the release without elaboration.[116] Apple justified the restrictions by explaining it could not individually review each game within a cloud gaming service's library and reiterated that standard screening processes were important for user security and privacy.[117] On the other side of the argument, with VPN apps, security researchers reported that even top-rated apps on iOS devices leaked user information and overcharged subscriptions.[118]

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Epic disclosed in its later preliminary injunction that it felt Apple thwarted its efforts to create a Metaverse, "a multi-purpose, persistent, interactive virtual space [that] fosters deep community [with] the communal experience of the *Fortnite* platform, the free flow of thoughts and ideas within the game's many virtual spaces, and the game's utility as an outlet for social connection…" [119] Sweeney commented, "Apple has outlawed the Metaverse. The principle they state, taken literally, would rule out all cross-platform ecosystems and games with user created modes: not just xCloud, Stadia, and GeForce Now, but also *Fortnite*, *Minecraft*, and *Roblox*."[120] Additionally, the imminent arrival of 5G telecommunications would reduce the latency on mobile networks enough to enable the next generation of cloud-based game services. Early in 2020, Apple filed a patent in Europe to enable on-demand cloud game services.

Coalition for App Fairness

On September 24, Epic Games, Match Group, Spotify and ten other companies teamed up to launch the Coalition for App Fairness, a nonprofit that advocated for legal and regulatory changes to the app stores. These app developers had all publicly criticized Apple's App Store practices. The Coalition argued Apple and other app marketplaces exploited developers with high commissions, stifled competition, and prioritized their own products and services. The Coalition website listed ten demands for the App Store to act upon. Their ambitious effort against Apple and other app store operators explicitly sought to gain support from a wider community: they pleaded to companies of all sizes to join. In an unofficial response, Apple updated its App Store websites to reiterate how its platform benefited over 28 million users in the developer program and how its high standards helped ensure the safe offering of nearly 2 million apps on 1.5 billion devices. Along with that, it also launched a new site for its Apple Video Partner Program with participation from its partner video entertainment providers. Although Apple's IAP system which charged 15% of sales must have been at least enabled in the Video Partner Program, members of the Program were able to add their own payment method.[121]

Path Forward for Epic and Apple

If Epic stayed the course to try and win at trial against Apple, Epic would face a years-long and risky legal battle. Alternatively, Epic could accept a short-term settlement if it could find ground that Apple would concede on, but that partial victory might be only for itself rather than for the industry as a whole. Some industry and legal experts postulated that a settlement was possible, but it was hard to know how far Epic would be willing to take things.[122] Whether the standoff ended in a negotiated settlement or after the conclusion of a full federal trial (with appeals), there were four primary matters on which Apple could concede to Epic and other developers, whether willingly or by order of the Court.

Pricing and Who Pays

Apple could charge a lower commission, either to a specific developer or to all developers. A one-off fee agreement between the App Store and a developer had precedent: companies such as Amazon, Uber, Lyft, and Airbnb got an exemption for offering tangible services, products, and experiences, and were not subject to the same 30% fee as most developers.[123] An agreement on pricing that affected only Epic or a subset of developers seemed unlikely if Sweeney maintained his emphasis on reaching an outcome that benefited all developers on the App Store.

Apple could offer more flexibility on fee agreements depending on the nature of a given app's revenue model. Some apps focused on a user's upfront purchase, whereas others implemented subscription-based fees. Apps such as *Fortnite* were free-to-download and use, but relied on non-

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subscription, in-app purchases to generate revenue. Apple and Google had both shown flexibility on its fee from developers depending on the transaction model of a given app: by October 2017, both the App and Play Stores charged 15% instead of 30% of subscriptions within an app, as long as the user had been subscribed for more than a year.[124]

Allowed Applications and Who Decides

Apple could allow more flexibility around allowing key categories of apps on the App Store. Allowing apps that implemented their own payment processing system in lieu of IAP would have been a major concession to Epic, whose primary goal was to introduce competition in payment processing and app distribution. Nearer on the horizon, Apple's decision to allow or ban and around fee structure for cloud gaming applications from the App Store would set a precedent for the rest of the platform. Transactions within games from a cloud gaming platform were unique in that they were a layer deeper than in-app purchases within an app like *Fortnite*, as the cloud game was stored and operated in a cloud environment separate from the Apple ecosystem. Additionally, Apple could allow apps that were app stores themselves, like the Epic Games Store, to decide their own policy around pricing and payments processing; allowing these independent app stores was a primary demand of Epic.

Apple could delegate app review to independent panels made up of third-party experts or government authorities that could modify App Store guidelines. Alternatively, regulatory bodies could require Apple grant third-party companies the right to interpret and appeal the terms and conditions of the App Store's fees more formally when a developer felt unfairly treated. A hybrid review body—composed of both internal Apple and external or regulatory personnel—could form to put such a mandate into practice. Such a system would not grant Epic and other developers immediate change in terms of the App Store's pricing and competition but would formalize a path to future change.

Long Road Ahead

It was unclear whether Epic would ever settle for anything short of Apple allowing competition in mobile app distribution and payment processing. In response to Apple's characterization of Sweeney's original email to Apple's executive team on June 30—asking for permission to provide a competing payment processing option via *Fortnite* and to provide a competing games store via Epic Games Store—as seeking a "special deal" for Epic Games, Sweeney resurfaced the message and highlighted: "we hope that Apple will also make these options equally to all iOS developers in order to make software sales and distribution [on iOS]… as open and competitive as it is on personal computers."[125] Sweeney continued to publicly emphasize his intention for the introduction and contribution to competition in Apple and Google's app stores be available to all developers.[126] Sweeney's public intentions were clear and consistent. In his last known correspondence directly with Apple back on August 13, Sweeney wrote:

> We hope that Apple will reflect on its platform restrictions and begin to make historic changes that bring to the world's billion iOS consumers the rights and freedoms enjoyed on the world's leading open computing platforms including Windows and macOS… If Apple chooses instead to take punitive action by blocking consumer access to *Fortnite* or forthcoming updates, then Epic will, regrettably, be in conflict with Apple… for so long as it takes to bring about change, if necessary for many years.[127]

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Exhibits

Exhibit 1 Platform Ecosystems for Video Gaming

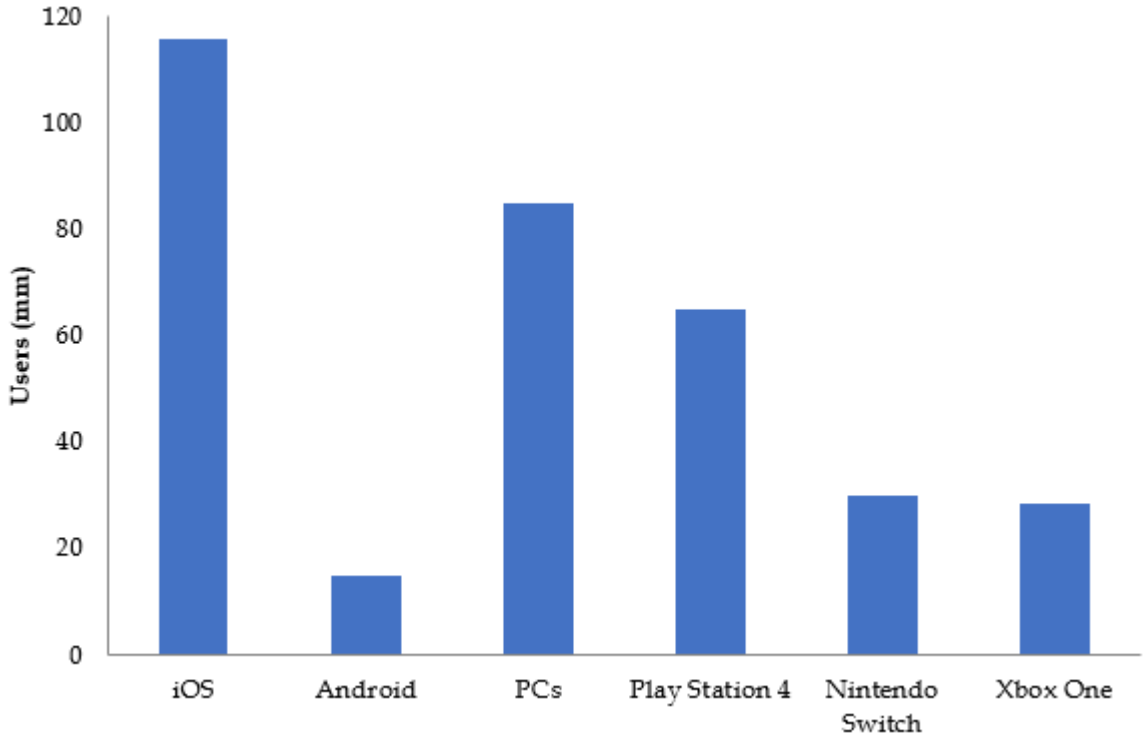
Platform	Category	Year	Users	Description
Google Android	Mobile	2008	2.5 billion (Android & iOS)	Partially open-source platform.
Apple iOS	Mobile	2008		Exclusively for Apple hardware
Microsoft Windows	PC	1985	1.3 billion (Windows & Mac OS)	OS for PCs, tablets, and embedded devices.
Apple Mac OS	PC	1984		Exclusive for Apple hardware.
Microsoft Xbox One	Console	2013	48 million	Has features in social networking, video sharing and streaming
Nintendo Switch	Console	2017	63 million	Both an at-home console and portable device.
Sony PlayStation 4	Console	2013	113 million	Largest share of console market.
Sony PS VR	Virtual Reality	2016	5.9 million	Add on for PlayStation 4 and 5 consoles.
Facebook Oculus Rift	Virtual Reality	2016	3.3 million	PC-tethered VR device primarily used for gaming.
HTC Vive	Virtual Reality	2016	1.9 million	PC-tethered VR system with motion controls and whole-room experience.

Source: Compiled by casewriter from: Teodora Dobrilova, "23+ mobile gaming statistics for 2020 – insights into a $76B games market," *Tech Jury*, July 19, 2020, https://techjury.net/blog/mobile-gaming-statistics/#gref, accessed September 2020; Christina Gough, "Lifetime unit sales of Xbox One consoles worldwide from December 2017 to August 2020," *Statista*, September 15, 2020, https://www.statista.com/statistics/1005403/global-xbox-one-console-unit-sales/, accessed September 2020; Christina Gough, "Lifetime unit sales of the Nintendo Switch console worldwide from March 2017 to August 2020," *Statista*, September 15, 2020, Christina Gough, "Cumulative unit sales of Sony PlayStation 4 consoles worldwide from August 2016 to August 2020", *Statista*, September 22, 2020, https://www.statista.com/statistics/651576/global-ps4-console-unit-sales/, accessed September 2020; H. Tankovska, "Unit shipments of virtual reality (VR) devices worldwide from 2017 to 2019 (in millions), by vendor," *Statista*, August 27, 2020, https://www.statista.com/statistics/671403/global-virtual-reality-device-shipments-by-vendor/, accessed September 2020.

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Exhibit 2 *Fortnite* Registered User Count by Platforms

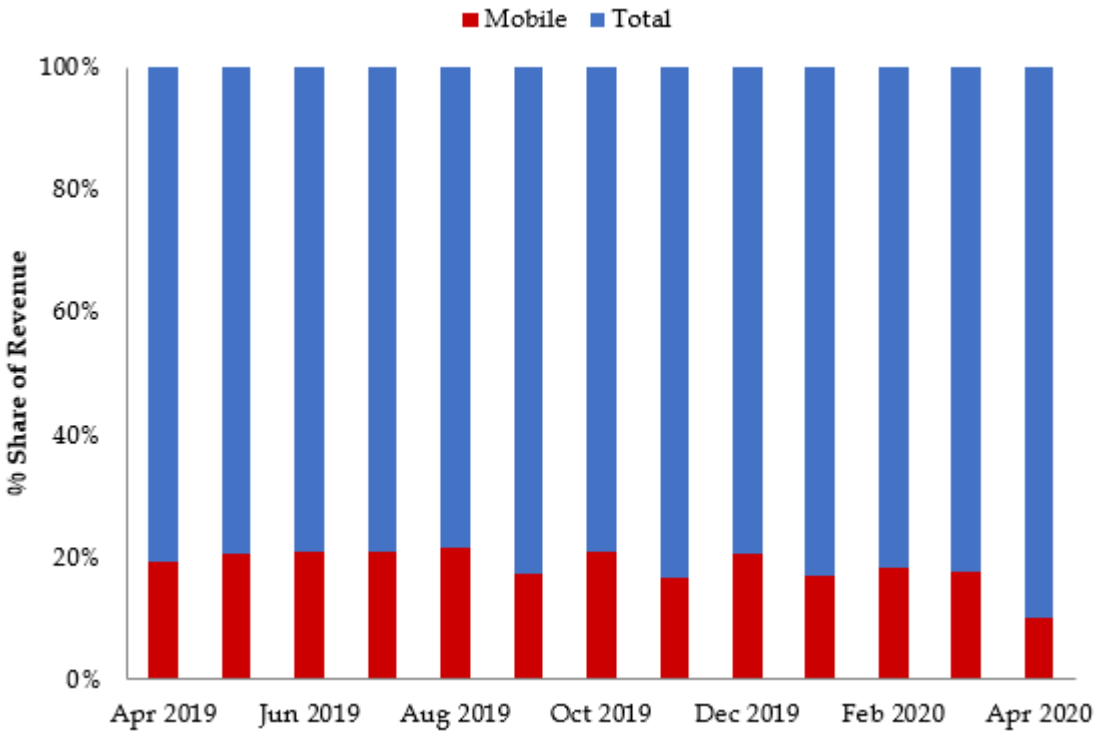


Source: Casewriter estimates based on: Motion for Preliminary Injunction, Epic Games, Inc. v. Apple Inc., Document #61, District Court, N.D. California, filed September 4, 2020, https://www.courtlistener.com/docket/17442392/61/epic-games-inc-v-apple-inc/, accessed September 2020; Emma Kidwell, "*Fortnite* on Android reaches 15 million downloads sans Google Play," *Gamasurta*, September 7, 2018, https://www.gamasutra.com/view/news/326087/Fortnite_on_Android_reaches_15_million_downloads_sans_Google_Play_.php, accessed September 2020; Omri Petitte, "How many people are playing Fortnite?" *PC Gamer*, May 3, 2019, https://www.pcgamer.com/how-many-people-are-playing-fortnite/, accessed September 2020; Matthew Handrahan, "Fortnite has been downloaded by half of all Nintendo Switch owners," *gamesindustry.biz*, November 1, 2018, https://www.gamesindustry.biz/articles/2018-11-01-fortnite-has-been-downloaded-by-half-of-all-nintendo-switch-owners, accessed September 2020.

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Exhibit 3 *Fortnite* Mobile vs. Total Revenue by Month, April 2018 – April 2020

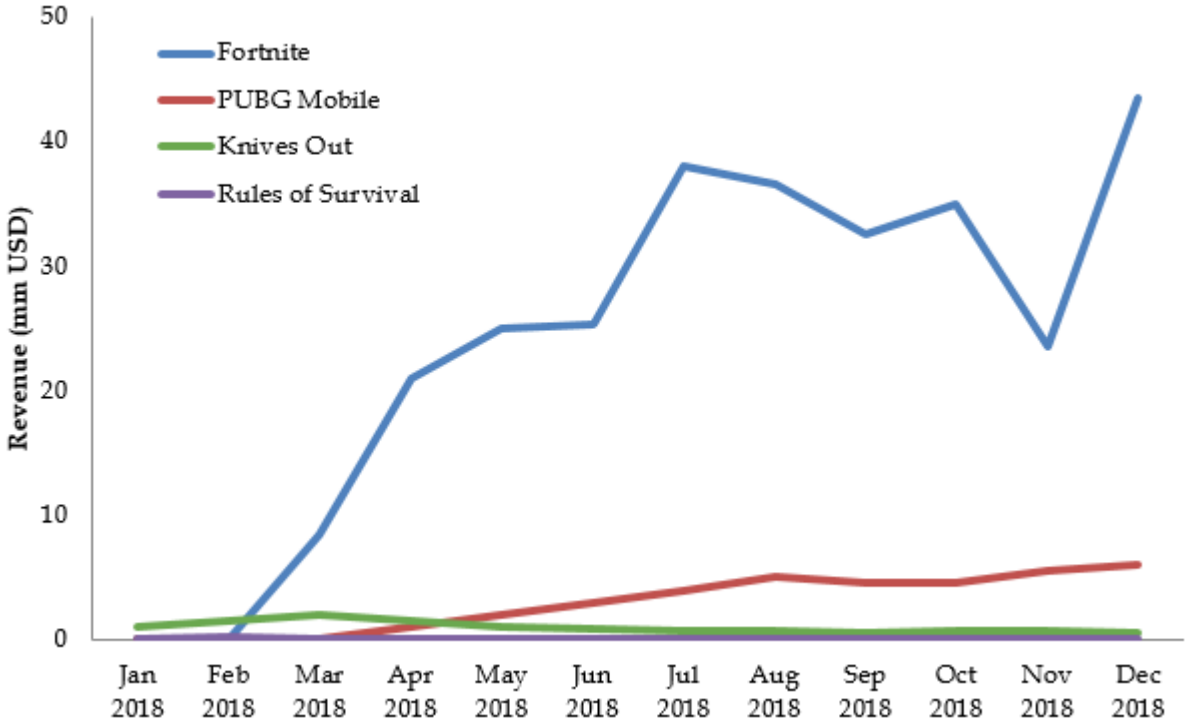


Source: Casewriter estimated based on: Mansoor Iqbal, "Fortnite usage and revenue statistics (2020)," *Business of Apps*, July 30, 2020, https://www.businessofapps.com/data/fortnite-statistics/, accessed September 2020; Brain Heater, "Fortnite had a $296 million April," *TechCrunch*, March 25, 2018, https://techcrunch.com/2018/05/25/fortnite-had-a-296-million-april/, accessed September 2020; Craig Chapple, "Fortnite mobile revenue hits $1 billion in two years," *SensorTower*, May 14, 2020, https://sensortower.com/blog/fortnite-mobile-revenue-1-billion, accessed September 2020; Matthew Forde, "Fortnite battle its way to $1 billion on mobile in two years," *PocketGamer.biz*, March 15, 2020, https://www.pocketgamer.biz/news/73368/fortnite-1-billion-usd-on-mobile/, accessed September 2020; Dean Takahashi, "Epic Games seeking to sell stake for $750 million at $17 billion valuation," *VentureBeat*, June 15, 2020, https://venturebeat.com/2020/06/15/epic-games-shareholders-seeking-to-sell-stake-for-750-million-at-17-billion-valuation/, accessed September 2020.

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Exhibit 4 *Fortnite* iOS Revenue, 2018 (U.S.)

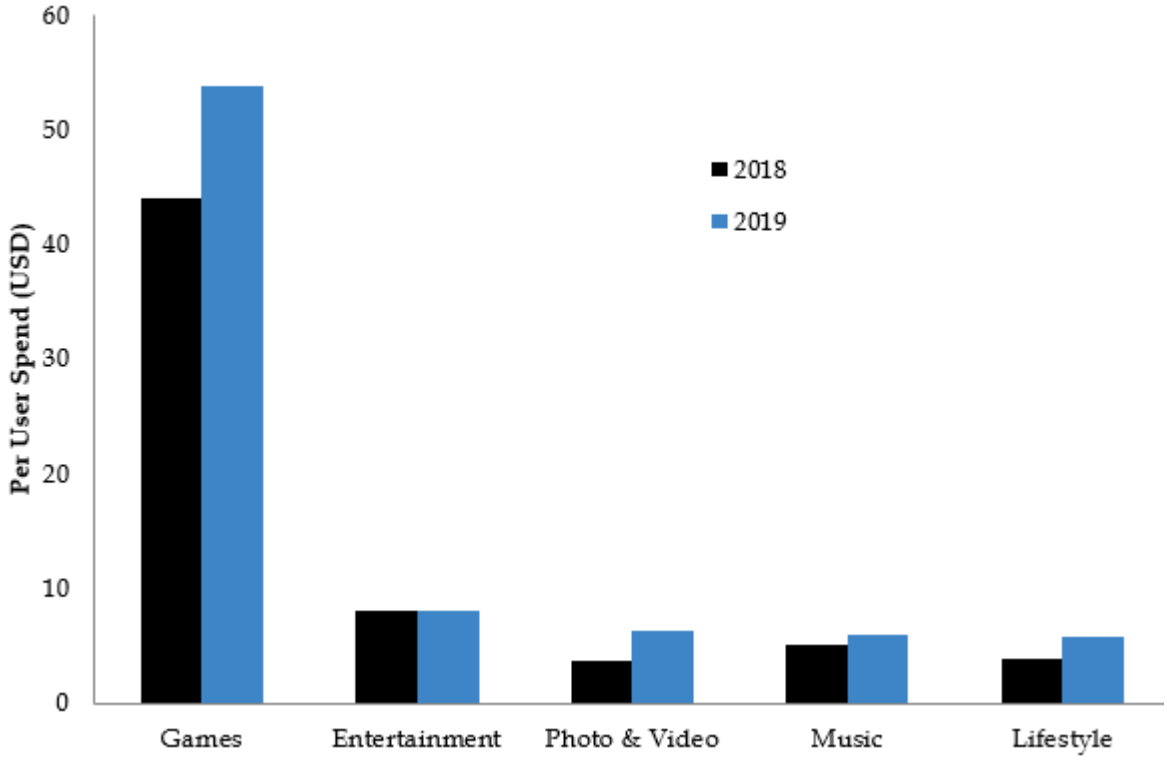


Source: Adapted by casewriter from: Hardik Shah, "The secret to developing a profitable mobile game," *Gamasutra*, April 10, 2020, https://www.gamasutra.com/blogs/HardikShah/20200410/361033/The_Secret_to_Developing_a_Profitable_Mobile_Game.php, accessed September 2020.

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Exhibit 5 Average iOS in-App Spending Per User by Category, 2018-2019 (U.S.)



Source: Adapted by casewriter from: Randy Nelson, "U.S. iPhone user spent an average of $100 on apps in 2019, up 27% from 2018," *Sensor Tower*, March 25, 2020, https://sensortower.com/blog/revenue-per-iphone-2019, accessed September 2020.

Note: Figure based on U.S. consumer spending in iPhone apps for Jan. 1, 2018 through Dec. 31, 2019. Includes premium apps and in-app purchase revenue.

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Exhibit 6 Summary of Tim Cook Testimony at Congressional Hearing (July 2020)

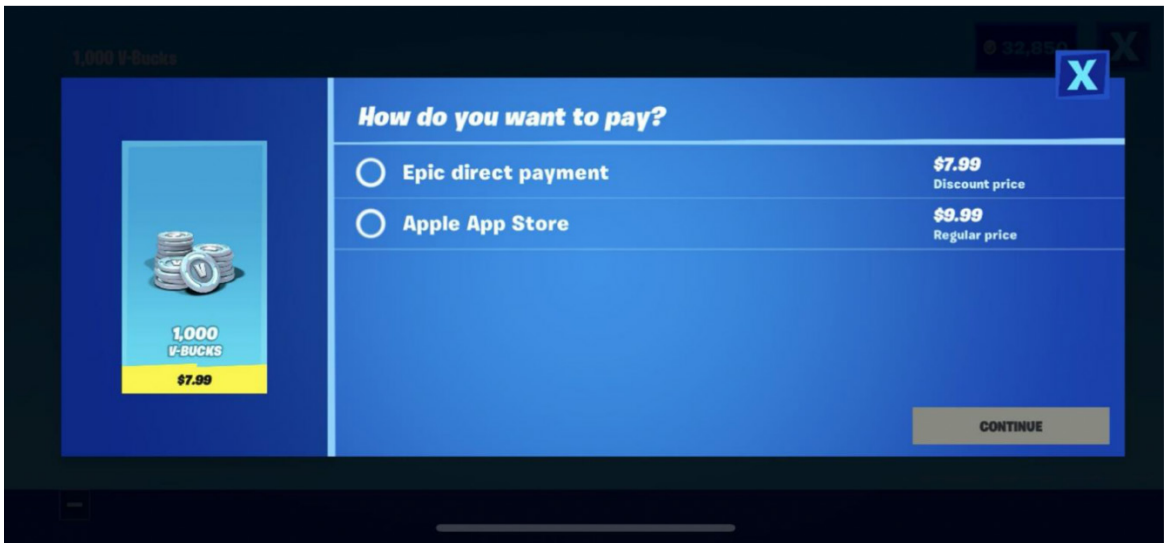
Representative Hank Johnson (D-GA)	Apple CEO Tim Cook
"Apple is the sole decision maker as to whether an app is made available to app users through the App Store, is that correct?"	"If it's a native app, yes..."
"Throughout our investigation we've heard concerns that rules governing the App Store review process are not available to the app developers. The rules are made up as you go, they are arbitrarily interpreted, enforced, and are subject to change whenever Apple sees fit to change and developers have no choice but to go along with the changes or they must leave the app store – that's an enormous amount of power. Also the rules get changed to benefit Apple at the expense of app developers and the app store is said to also discriminate app developers with similar apps on the Apple platform and also as to small app developers versus large app developers. Does Apple not treat al app developers equally?"	"Sir, we treat every developer the same. We have open and transparent rules. It's a rigorous process. Because we care so deeply about privacy, security, and quality, we do look at every app before it goes on, but those rules apply evenly to everyone…"
"Some developers are favored over others though. Isn't that correct?"	"That is not correct, and as you can tell from going…"
"Apple has negotiated exceptions to its typical 30 percent commission for some apps like Amazon Prime, is that a reduced commission, such as the one that Amazon Prime gets, available to other app developers?	"It's available to anyone meeting the conditions, yes."
"Apple requires all app developers to use Apple's payment processing system if those developers want to sell their goods or services to Apple users through Apple's App Store, isn't that correct?"	"That is correct…"
"And by processing payment for apps that you allow into the App Store, you collect their customer data and you use that data to inform Apple as to whether or not it would be profitable for Apple to launch a competing app, isn't that correct?"	"Sir, 84 percent are charged nothing. The remaining 16 percent either pay 15 or 30 depending on the specifics. If it's a second-year of a subscription, as an example, it only pays 15 percent if you look at the history …"
"What's to stop Apple from increasing its commission to 50 percent?"	[Cook responded that Apple has never charged its commission fee since the App Store started operating in 2008.] "There's a competition for developers just like there is a competition for customers. So the competition for developers they can write their apps for Android, Windows, Xbox, PlayStation, so we have years at the developer side and the customer side, which is essentially it's so competitive I would describe it as a street share for market share in the smartphone business."
"Has Apple ever retaliated against or disadvantaged a developer who went public about their frustrations with the App Store?"	"Sir, we do not retaliate or bully people. It's strongly against our company culture."

Source: Adapted and transcribed by the casewriter from: CNBC Television, "Apple CEO Tim Cook: We treat app developers on the App Store equally," YouTube, published July 29, 2020, https://www.youtube.com/watch?v=4GGIIOckamA, accessed September 2020.

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Exhibit 7 *Fortnite* Direct Payment Option



Source: Epic Games, screen shot, from Ben Gillbert, "Apple and Epic Games are mired in a bitter legal battle, and 'Fortnite' is in the middle of it. Here's how Apple found itself in Epic's crosshairs." Business Insider, August 26, 2020, https://www.businessinsider.com/fortnite-epic-games-apple-lawsuit-explained-2020-8#what-started-all-of-this-an-update-to-fortnite-1, accessed September 2020.

Exhibit 8 Epic Games Nineteen Eighty-Fortnite vs. Original Apple 1984 Super Bowl Advertisement



Source: Compiled from: Avery Hartmans, "All the Easter eggs hidden in 'Nineteen Eighy-Fortnite,' the clever video Epic Games made to taunt Apple amid their heated battle over App Store rules." Business Insider, August 13, 2020, https://www.businessinsider.com/fortnite-apple-parody-video-easter-eggs-2020-8, accessed September 2020; Jack Picone, "Super Bowl Sunday: Innovative ads that have changed the game & What you can learn from them," New York Film Academy, February 2, 2018, https://www.nyfa.edu/student-resources/super-bowl-sunday-innovative-ads-changed-game-can-learn/, accessed September 2020.

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Exhibit 9 Summary of Arguments from Epic Expert Opinion on Apple

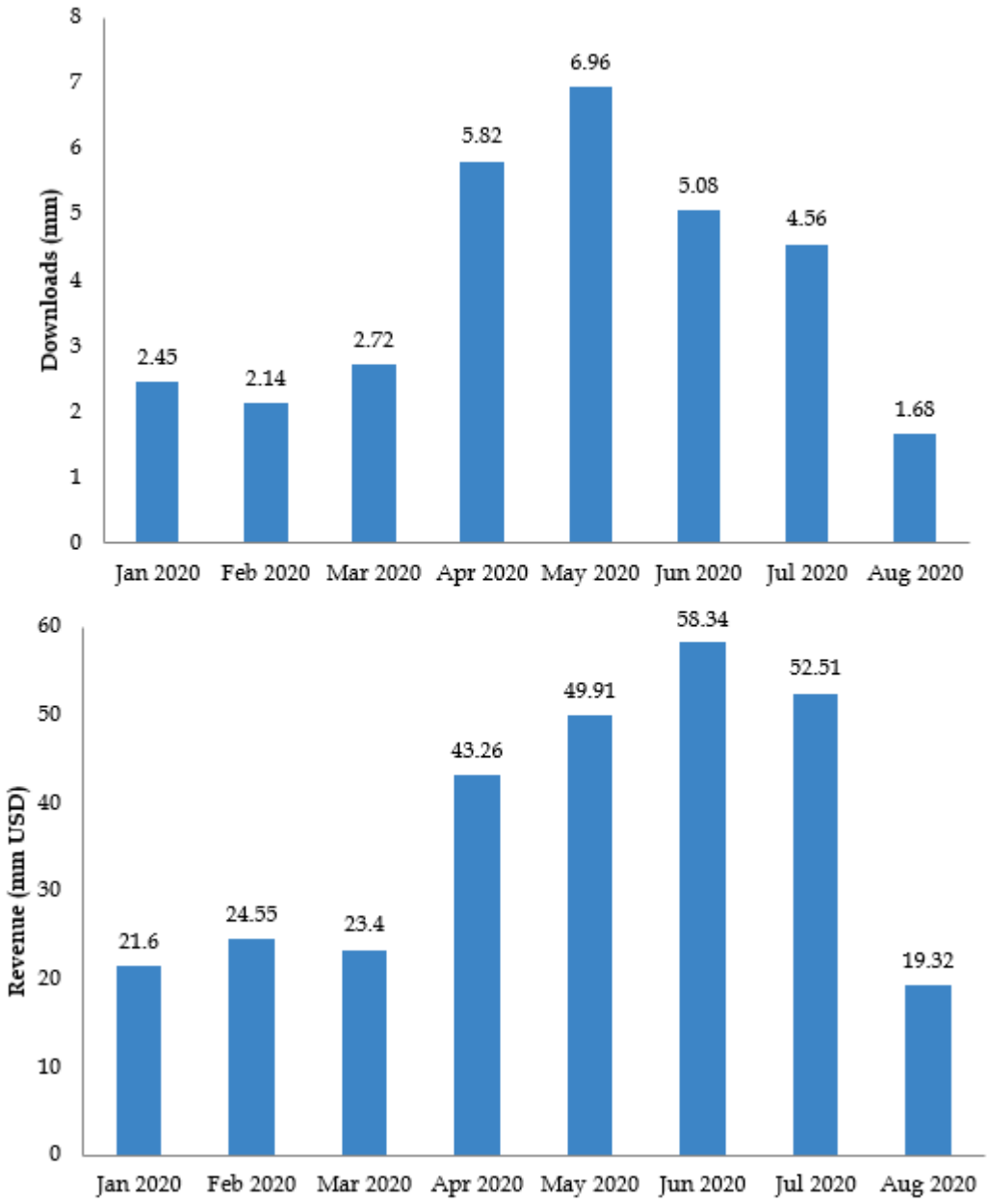
Category	Description
Lack of Substitutes	
Users	Phone users often lack good substitutes for using iOS apps.
Developers	Developers do not have meaningful substitutes for making their apps available to iPhone users other than using the iOS platform.
Lock-In	
Mobile Hardware	Consumers invest in purchasing a smartphone that they generally keep for over two years. Apple's annual iPhone sales in 2019 were about one fifth of its total installed base of iPhone active users.
Learning	Users switching to Android have to learn how to use a new mobile operating system.
Third-Party Apps	Users have paid to download apps in Apple's App Store and would not be able to use those apps on an Android smartphone.
Data	Setting up a new iPhone, including migrating data, is much easier for an existing iPhone user than setting up an Android smartphone.
Network	Many iPhone users have networks of family and friends with whom they communicate using proprietary Apple technologies that would not be available on Android.
First-Party Services	iPhone users who are connected to Apple services, such as iCloud Photos, iCloud Drive, Apple News, and Apple TV+, would effectively lose access to those services if they switched to an Android smartphone.
Hardware Ecosystem	iPhone users who have other Apple devices, such as iPads and MacBooks, use Apple apps and services across their Apple devices, such as iMessage, FaceTime, AirDrop, Find My, iCloud Photos, iCloud Drive, Apple News, and Apple TV+.

Source: Compiled by casewriter from: Declaration in Support, Epic Games, Inc. v. Apple Inc., Document #62, District Court, N.D. California, filed September 4, 2020, https://www.courtlistener.com/docket/17442392/62/epic-games-inc-v-apple-inc/, accessed September 2020.

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Exhibit 10 *Fortnite*'s Monthly Downloads and Revenue Before and After the Ban

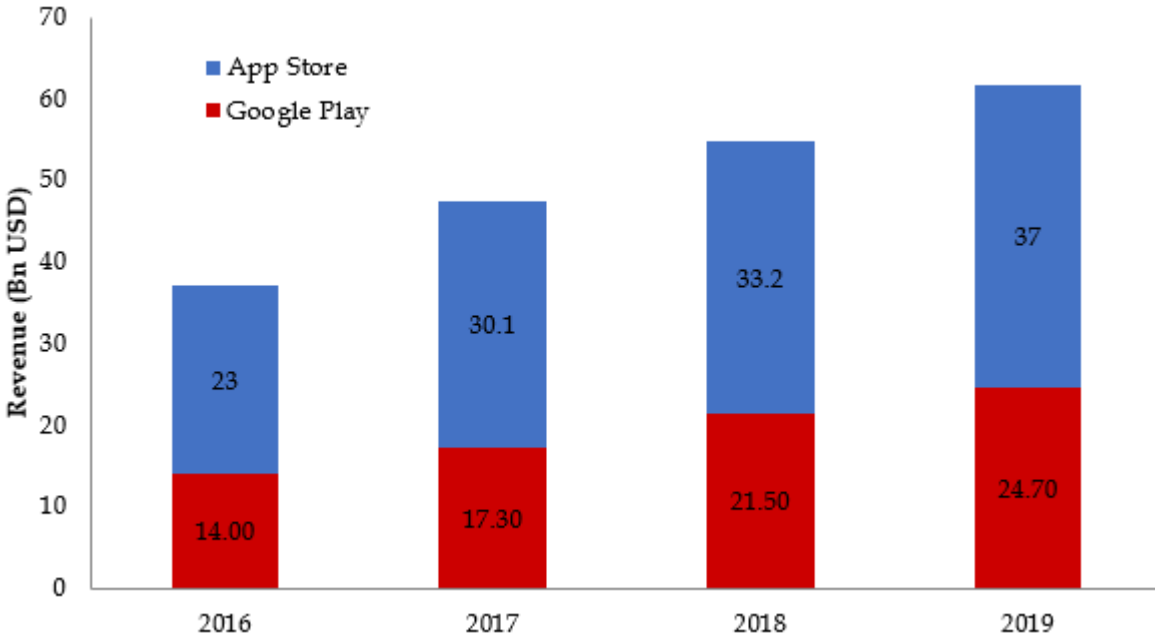


Source: Adapted by casewriter from : Sarah E. Needleman, "'Fortnite' fans are pushed to choose sides in Epic's legal spat with Apple, Google," *Wall Street Journal*, August 27, 2020, https://www.wsj.com/articles/fortnite-fans-are-pushed-to-choose-sides-in-epics-legal-spat-with-apple-google-11598545530, accessed September 2020.

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Exhibit 11 Worldwide Mobile Game Revenue



Source: Adapted by casewriter from : Randy Nelson, "Global app revenue grew 35% in 2017 to nearly $60 billion," *Sensor Tower*, January 5, 2018, https://sensortower.com/blog/app-revenue-and-downloads-2017, accessed September 2020; Randy Nelson, "Global app revenue grew 23% in 2018 to more than $71 billion on iOS and Google Play," *Sensor Tower*, January 16, 2019, https://sensortower.com/blog/app-revenue-and-downloads-2018, accessed September 2020; Randy Nelson, "Consumer spending in mobile apps grew 17% in 2019 to exceed $83 billion globally," *Sensor Tower*, January 6, 2020, https://sensortower.com/blog/app-revenue-and-downloads-2019, accessed September 2020.

Exhibit 12 Timeline of Legal Actions (August 13 to September 24, 2020)

Date	Legal Action
Aug 13	COMPLAINT for Injunctive Relief against Apple Inc.
Aug 13	COMPLAINT for Injunctive Relief against Google LLC
Aug 17	MOTION for Temporary Restraining Order filed by Epic Games, Inc.
Aug 21	OPPOSITION/RESPONSE filed by Apple Inc.
Aug 23	REPLY filed by Epic Games, Inc.
Aug 24	ORDER by Judge Yvonne Gonzalez Rogers granting in part and denying in part Motion for Temporary Restraining Order
Sep 4	MOTION for Preliminary Injunction filed by Epic Games, Inc.
Sep 8	ANSWER to Complaint with Trial by jury on all issues so triable, COUNTERCLAIM against Epic Games, Inc. by Apple Inc.
Sep 15	OPPOSITION/RESPONSE (re MOTION for Preliminary Injunction) filed by Apple Inc.
Sep 18	REPLY (re MOTION for Preliminary Injunction) filed by Epic Games, Inc.
Sep 24	JOINT STATEMENT
Sep 28	PRELIMINARY INJUNCTION HEARING

Source: Casewriter.

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