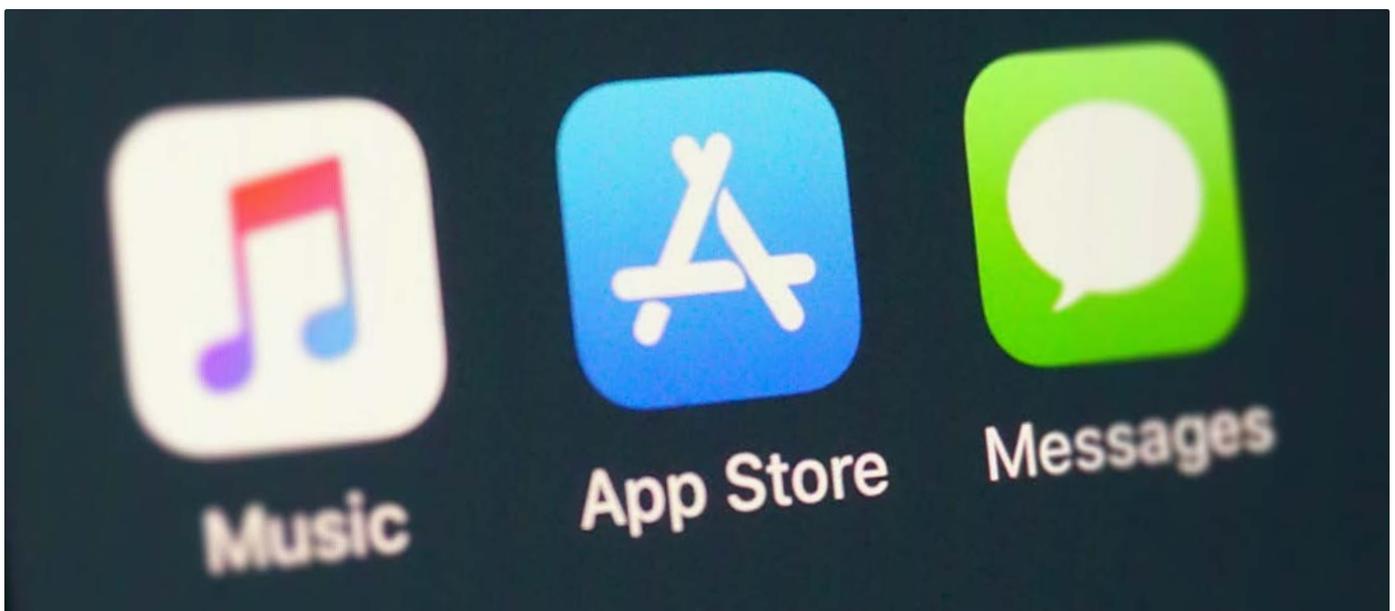


Apple's App Store and Other Digital Marketplaces

A Comparison of Commission Rates



July 22, 2020

Jonathan Borck, Ph.D.

Juliette Caminade, Ph.D.

Markus von Wartburg, Ph.D.

Support for this study was provided by Apple. The conclusions and opinions expressed are exclusively those of the authors.

Over the last two decades, with advances in digital and mobile technologies, digital marketplaces have emerged as a new type of business model. Digital marketplaces are platforms that use digital technologies and tools to connect buyers and sellers. They have become ubiquitous in many sectors of the economy: examples include retail marketplaces such as Amazon and Etsy, ridesharing apps such as Uber and Lyft, travel platforms such as Airbnb and Booking.com, and food delivery platforms such as Grubhub and Uber Eats.

Digital marketplaces create value by facilitating and promoting valuable transactions between buyers and sellers. As a result, they typically share certain features that are critical to their management and success. Many digital marketplaces, for example, set up rules and policies to govern transactions and promote trust and reliability among both sellers and buyers. Some digital marketplaces also provide various services to users and invest in technology to improve the performance of the platform. In return, digital marketplaces typically charge fees based on the transactions they facilitate.

Apple's App Store ecosystem facilitates interactions between app developers and nearly one billion Apple device owners globally. To promote its success, Apple provides developers with distribution, search, and review services, as well as a set of tools to build and monetize apps. Apple also invests in the safety of the App Store and in developing new technologies and functionalities. While Apple charges developers an annual fee to enroll in its Developer Program and upload apps to the App Store, Apple does not charge developers to offer each individual app on the App Store, to distribute updates to users, or to access Apple's app analytics, marketing, and developer tools. Apple receives a commission from developers when users download paid apps and make in-app purchases of digital content, services, and subscriptions.^{1,2}

Study Goal

The goal of this study is to compare the commission rates of Apple's App Store with those of other app stores and digital marketplaces, and to evaluate the App Store commission and associated rules in the context of the business model used both by digital marketplaces and platforms in general.

Apple's App Store commission rate is similar in magnitude to those of other app stores and digital content marketplaces.

1 Apple does not charge a commission on the purchase of physical products and services through the app.

2 Developers set the price of apps on the App Store, and Apple does not charge consumers anything (beyond the price set by the developer) to obtain apps or digital content.

Findings

Our study shows that Apple's App Store commission rate is similar in magnitude to the commission rates charged by many other app stores and digital content marketplaces. The commission rates charged by digital marketplaces most similar to the App Store, such as other app stores and video game digital marketplaces, are generally around 30%.

Marketplaces that distribute digital content such as videos, podcasts, eBooks, and audiobooks generally charge commission rates of 30% or more. Commission rates charged by e-commerce marketplaces vary by industry but sometimes exceed 30%.

Many sellers currently sell (or previously sold) their goods through brick-and-mortar stores and marketplaces. We find that sellers generally earn a substantially lower share of total revenue from the distribution through brick-and-mortar stores and marketplaces than through digital marketplaces such as the Apple App Store.

Developers earn a substantially higher share of total sales made through digital marketplaces, including the Apple App Store, than through many brick-and-mortar channels.

Digital Marketplaces and Their Business Models

Digital marketplaces are relatively novel platforms. Some have disrupted entire industries such as hospitality, food delivery, or ridesharing. Some have expanded existing markets, while others created entirely new markets. All rely on improved technologies such as smartphones and video game consoles. Irrespective of their particular context, digital platforms share a set of characteristics and way of operating.

- Digital marketplaces are two-sided platforms that connect sellers and buyers and provide them with an environment in which to interact and trade. For example, travelers and hosts can connect and transact through the Airbnb platform. Passengers and drivers can connect through the Uber and Lyft apps. And app stores connect app developers with device owners who are interested in those apps.
- A marketplace's attractiveness is determined primarily by its ability to bring on board enough buyers and enough sellers, in a way that preserves the platform's trust and integrity. By enrolling more high-quality sellers, a digital marketplace becomes more valuable to buyers. Similarly, by engaging more buyers, a digital marketplace becomes more valuable to sellers. This feature of digital marketplaces is known as an "indirect network effect."
- Digital marketplaces provide tools and services to facilitate and encourage valuable interactions between buyers and sellers, or between developers and users. This involves upfront investments to build the platform, as well as continued

investments to enhance the platform with improved functionalities to maintain its appeal to all users of the platform. Such functionalities include helping users find products that match their interests and pay in secure ways.

- Digital marketplaces may provide more than matchmaking. Some invest in various tools and technologies to help sellers and developers offer innovative products and better ways to monetize them.

Apple's App Store exhibits features of a digital marketplace:

- **Connecting developers and app users** – The App Store is a digital marketplace for app developers and Apple device users to interact and transact. The App Store enables developers of all sizes to distribute apps (and updates) to a large and valuable base of users throughout the world.³ Users can download a variety of apps from many different developers.
- **Attracting developers and engaging app users** – Users have access to a diverse library of almost two million apps that have gone through Apple's app review process. All apps submitted to the App Store must abide by the App Store Review Guidelines, which set out standards for safety, performance, business, and design, as well as legal requirements.⁴ The goal of this review process is to ensure that all apps on the App Store are safe, thereby preserving the trust and integrity of the ecosystem.
- **Providing tools to encourage valuable interactions between developers and users** – Apple offers tools — including secure payment services, app analytics, and reporting tools — to assist developers in their marketing and sales efforts. Apple also continues to develop additional search functionalities and refine its search algorithm to help users find apps.
- **Investing in the ecosystem** – Apple invests in its ecosystem to attract and incentivize developers to create and sell innovative apps. One way it does so is by providing developers with tools, compilers, programming languages, libraries, application programming interfaces (APIs), and software development kits (SDKs) to create, test, configure, and upgrade their apps. In addition, Apple makes its innovations and intellectual property available to developers, for example, through the use of custom chips, cameras, operating system and security features, and cloud services.

Because the value of digital marketplaces comes from enabling and facilitating transactions and making investments to support these transactions, digital marketplaces typically charge transaction fees. Transaction-based commission rates lower the barriers

³ The user base of the Apple App Store tends to be more affluent and has a greater propensity to spend on apps. See Omdia, *App Ecosystems Forecast 2019–2024*.

⁴ See Apple's App Store Review Guidelines (<https://developer.apple.com/app-store/review/guidelines>) and Kif Leswing, "Inside Apple's team that greenlights iPhone apps for the App Store," CNBC (June 21, 2019).

to entry for small sellers and developers by minimizing upfront payments, and reinforce the marketplace's incentive to promote matches that generate high long-term value.

Comparison of the Commission Rates of Apple's App Store with Those of Other App Stores and Marketplaces

The Apple App Store's commission rates

Apple charges a commission when device owners download paid apps and make in-app purchases of digital content, services, and subscriptions.⁵ Developers earn 70% of sales from paid apps and in-app purchases, and Apple collects a 30% commission. For in-app subscriptions, Apple charges a 30% commission for the first year. After that, Apple's commission falls to 15%, meaning that developers' earnings increase to 85% of sales.

Developers can also monetize digital content and services on their apps in ways that do not involve transacting directly through the App Store, in which case Apple collects no commission. Specifically, developers can sell digital content, services, and subscriptions outside of the App Store that can be consumed and enjoyed within apps on Apple devices. In a recent study, we estimated that the revenue driven by app users' engagement with music and video streaming apps on Apple devices in the US is roughly twice as large as in-app purchases through the App Store.⁶ For newspapers, magazines, and audiobooks, this discrepancy is even greater, and enterprise apps are usually paid for by businesses and institutions entirely outside of the App Store despite being used by many employees, students, and others on Apple devices. Additionally, developers can monetize their digital content and services through in-app advertising, which is a large source of revenue for developers. This is especially true for gaming apps: In 2019, US game developers made more money from in-app ad sales on the iOS ecosystem than from billings through the App Store.

Developers can also monetize their apps in other ways, including through the sale of physical goods and services on their apps (such as grocery or food delivery apps). iOS apps facilitated more than \$90 billion in sales of physical goods and services in the US in 2019. Apple receives no commission on such sales.

Comparison with other marketplaces and distribution systems

To put Apple's commission rates in context, we reviewed commission rates used by a diverse set of digital marketplaces. Our review included four types of digital marketplaces, grouped by their business model and ordered according to their similarity with Apple's App Store: (1) other app stores and software distribution platforms, (2) video game digital marketplaces, (3) marketplaces that distribute digital content, and (4) e-commerce mar-

5 In addition, to upload apps, Apple charges developers a \$99 annual fee for the Apple Developer Program and a \$299 fee for the enterprise version. These fees are fixed and do not affect the commission rate on any individual app download, in-app purchase, or in-app subscription. Consequently, we do not consider these fees in our comparisons of commission rates in this report.

6 These estimates are based on Apple data and the results of our earlier study "How Large Is the Apple App Store Ecosystem: A Global Perspective for 2019" (June 15, 2020).

marketplaces (that sell physical goods and services).⁷ We also reviewed brick-and-mortar marketplaces and distributors. In this process, we relied on public information provided by the marketplaces themselves when available, and from reliable third-party sources otherwise.⁸

1. Other app stores and software distribution platforms

The closest comparison to Apple's App Store is provided by other large app stores and software distribution platforms. We reviewed the commission rates charged by large app stores — including the Google Play Store (Google's app store for certified Android devices), the Amazon Appstore (for Amazon and Android devices), and Samsung's Galaxy Store (an Android app store for Samsung devices) — as well as broader platforms such as the Microsoft Store which distributes software and games for computers and tablets that run on Windows and for Xbox consoles.

As listed in Table 1, all these app stores charge the same standard commission rate as Apple (30%). Each has its own exceptions, particularly with respect to subscriptions. Commission rates of 15% for subscriptions after 12 months are on the low end of commission rates. For instance, similar to the Apple App Store, Google Play's commission rate for subscriptions is 15% after 12 months, and Amazon's commission is 20% for video streaming subscriptions. While the Galaxy Store charges a 30% standard commission rate, it explicitly states that this rate may be negotiable.

For Microsoft's software distribution platform, the commission is also 30% for all games — including subscriptions — and on certain stores (such as the Microsoft Store for Business and the Microsoft Store for Education), although it otherwise charges 15% for non-game software and subscriptions for computers, tablets, and consoles.⁹ Some app stores also charge fixed account fees.¹⁰

Table 1: Commission Rates for Select App Stores

Google Play Store	■ 30% (15% for subscriptions after 12 months)
Amazon Appstore	■ 30% (20% for video streaming subscriptions)
Samsung Galaxy Store	■ 30% (or otherwise agreed-upon)
Microsoft Store	<ul style="list-style-type: none"> ■ 30% on games ■ 30% on all sales in Business and Education stores ■ 30% for Windows 8 devices ■ 15% otherwise
Apple App Store	■ 30% (15% for subscriptions after 12 months)

7 A detailed analysis of the similarities and differences between Apple's App Store, and the services that it provides, and these other digital marketplaces is beyond the scope of this study.

8 A detailed list of the commission rates, rules, and sources is included in the Appendix.

9 Starting in March 2019, Microsoft briefly lowered the 15% commission rate it charged on qualifying sales to 5%, before increasing it back to 15% in January 2020.

10 The Google Play Store charges a one-time \$25 registration fee for a developer account. The Microsoft Store charges a one-time fee of \$19 for individual developer accounts and \$99 for company developer accounts.

We also reviewed the rates charged by a few other app stores, such as Aptoide (an open source Android app store) and LG SmartWorld (an Android app store for LG devices), which charge commissions in the 25–30% range.

In China, in the absence of Google Play, dozens of competing Android app stores have sprung up. They include app stores from digital companies Tencent (MyApp) and Qihoo 360 (360 Mobile Assistant), from smartphone manufacturers (such as Huawei AppGallery, OPPO Software Store, Vivo App Store, and Xiaomi's MIUI App Store), and from phone carriers (such as China Mobile's MM Store), among others. The commission rate charged by these app stores is often 50% or more.¹¹

Not all app stores have been successful, and some of them have closed. This is not unexpected as app stores, and digital marketplaces in general, need to attract a sufficient user base and offer developers attractive opportunities to thrive. We reviewed commission rates charged by app stores that have closed down, such as BlackBerry World, the Windows Phone Store, the Nokia Store, and Handango. The commission rates for these four now-defunct app stores were very similar, at least 30%.

2. Video game digital marketplaces

Games represent a significant share of mobile apps, so video game digital marketplaces are a second natural comparison to app stores. In addition to being sold on mobile platforms, video games are also sold through the online stores of video game console makers such as Microsoft (Xbox), Sony (PlayStation), and Nintendo, or through digital video game distribution platforms such as Steam (owned by Valve) and Epic Games Store for PC gaming.

We reviewed the commission rates charged by large video game console makers and video game distribution platforms. As shown in Table 2, their commission rates are generally 30%. Steam's commission rate is volume-adjusted (30% for games earnings under \$10 million, 25% for earnings between \$10 and \$50 million, and 20% for earnings above \$50 million). An exception is the Epic Games Store, which charges a commission rate of 12%.^{12,13}

11 Certain app stores may have lower rates (around 30%). App stores that charge higher rates may provide expanded services, such as game promotion.

12 The Epic Games Store offers fewer features than Steam, and relies on exclusive distribution deals to build its digital distribution platform. See, e.g., Nick Statt, "Epic vs. Steam: The console war reimagined on the PC," *The Verge* (April 16, 2019). Epic also charges a 5% royalty on games sold on other marketplaces if they were developed using Epic's game engine.

13 We also reviewed the commission rates charged by smaller online gaming platforms, such as itch.io, Game Jolt, GOG.com, Humble Store, and GamersGate. Their business models are more varied. GOG.com, GamersGate, and Humble Store are most similar to the larger stores and charge commission rates on game revenues of 25–30%. Itch.io uses an open revenue sharing model, while Game Jolt charges at most 10% on game revenue but 70% on advertising revenue.

Table 2: Commission Rates for Select Video Game Digital Marketplaces

Xbox	■ 30% (15% for non-video game subscriptions)
PlayStation	■ 30%*
Nintendo	■ 30%*
Steam	<ul style="list-style-type: none"> ■ 30% for sales below \$10 million ■ 25% between \$10 and \$50 million ■ 20% above \$50 million
Epic Games	■ 12%

* Commission rate from third-party sources, not disclosed by the marketplace.

3. Marketplaces that distribute digital content

Aside from video games, a variety of digital content is published by platforms. These platforms are often specialized and less similar to Apple's App Store. Platforms that distribute digital content generally charge commissions in the 30–50% range, as reflected in Table 3. While some of those platforms take a commission on paid transactions, others take a commission on advertising revenue, or both. Examples of such platforms include the following:

- **Video** content can be self-published and distributed through YouTube and Amazon Prime Video Direct. YouTube is reported to collect 45% of advertising revenues, while Amazon collects 50% of purchase and rental revenues. Video content can also be distributed through a "channel model," for example, through Roku. Roku collects 20% of purchases from viewers; it also collects the revenue from selling 30% of the advertising inventory of ad-supported channels.
- **EBooks** can be self-published and distributed on Amazon's Kindle Direct Publishing, Barnes & Noble's Nook, or Kobo. Their typical commission rates are in the 30–35% range.
- **Audiobooks** can be self-published and distributed on Amazon's Audible platform, which charges a commission rate of 60–75%, or on Kobo, which charges a commission rate of 55–68%.
- **Podcasts** can be created, distributed, and monetized through platforms such as Spotify's Anchor, which charges a 30% fee on sponsorships (from advertisers) and a 9.5% fee on donations from listeners.
- Gamers can **livestream** their play through Twitch, paying a commission fee of 50% on subscription revenue, in addition to a minimum of 25% on advertising revenue. Creators can post content and receive funding on Patreon's platform, for a commission of up to 14.9%.

Table 3: Commission Rates for Select Digital Content Platforms

Anchor by Spotify	<ul style="list-style-type: none"> ■ 30% on sponsorships (advertising) ■ 9.5% on listener donations (including 5% payment processing fee)
Twitch	<ul style="list-style-type: none"> ■ 50% on net subscription revenue ■ 25% (minimum) on advertising revenue
Roku	<ul style="list-style-type: none"> ■ 20% on pay-to-install or in-channel purchases ■ 30% of advertising inventory
YouTube	<ul style="list-style-type: none"> ■ 45% on advertising revenue*
Amazon Prime Video Direct	<ul style="list-style-type: none"> ■ 50% on purchase and rental revenue
Kindle Direct Publishing	<ul style="list-style-type: none"> ■ 30% for eBooks between \$2.99 and \$9.99 ■ 65% otherwise
Nook	<ul style="list-style-type: none"> ■ 35% for eBooks between \$2.99 and \$199.99 ■ 60% otherwise
Kobo	<ul style="list-style-type: none"> ■ 30% for eBooks \$2.99 and above ■ 55% for eBooks below \$2.99 ■ 55–68% for audiobooks
Audible	<ul style="list-style-type: none"> ■ 60% for exclusive content ■ 75% otherwise
Patreon	<ul style="list-style-type: none"> ■ 7.9%, 10.9%, or 14.9% depending on features

* Commission rate from third-party sources, not disclosed by the marketplace.

4. E-commerce marketplaces

E-commerce marketplaces serve as our fourth comparison set. A multitude of online marketplaces have emerged in the last 20 years, facilitating transactions in a wide set of industries. An important aspect of e-commerce marketplaces is that they use a variety of business models, and (largely) involve physical goods and services rather than digital content and services.

For e-commerce marketplaces, the commission rates and structure vary, as reflected in Table 4.¹⁴ Examples of such marketplaces include the following:

- **General online retail** marketplaces include Amazon, Walmart, eBay, and Etsy, which typically charge sellers standard commissions ranging between 5% and 20% of the product price.¹⁵
- **Travel** platforms that facilitate lodging include Airbnb, VRBO, and Booking.com, which are reported to charge commissions of 14–20% of the total value of the booking.

¹⁴ Some e-commerce marketplaces charge separate fees to sellers and buyers.

¹⁵ Online retail marketplaces may assess additional fees, such as distribution and advertising fees, listing fees, or certain fixed fees. For example, Amazon charges sellers on its e-commerce platform a monthly \$39.99 fee for a professional account. Online retail marketplaces may also charge membership fees on the buyer side (e.g., Amazon Prime fees).

- **Ridesharing** platforms such as Uber and Lyft are reported to charge fees amounting to about 20–25% of the total ride prices.
- **Food delivery** platforms such as Uber Eats and Grubhub offer delivery services for a commission of 30% or more. (Commissions on pick-ups and self-delivery are lower, in the 15–23% range, approximately.)
- **Freelancing** platforms for various types of workers include Upwork, TaskRabbit, and Spotify's SoundBetter, which charge fees between 5% and 20% of the service value.
- **Ticket** resale marketplaces such as StubHub or Ticketmaster are reported to charge around 30–37% commissions on the total ticket price.

Table 4: Commission Rates for Select e-Commerce Marketplaces

General Retail**		Travel	
Amazon	▪ 8–17%	Airbnb	▪ 17.2% ▪ 14–20% for hotels ▪ 20% for Experiences (including online ones)
eBay	▪ 10–12%	Booking.com	▪ 15% on average
Etsy	▪ 5% +3% for Etsy Payment	VRBO	▪ 18–19%*
Walmart	▪ 6–15%		
Poshmark	▪ 20%		
Ridesharing		Ticket Resale	
Uber	▪ ~25%*	StubHub	▪ ~37%*
Lyft	▪ ~20%*	Ticketmaster	▪ ~31%*
Food Delivery**		Freelancing Services	
Uber Eats	▪ 15–30%	TaskRabbit	▪ 15%
Grubhub	▪ 23–33%+	Upwork	▪ 20% below \$500 ▪ 10% for \$500–10,000 ▪ 5% above \$10,000
		SoundBetter by Spotify	▪ 5%*

* Commission rate from third party sources, not disclosed by the marketplace.

** Standard seller commission rates only.

5. Brick-and-mortar production, distribution, and marketplaces

Examples of brick-and-mortar production, distribution, and marketplaces serve as our last comparison set. While their business models and cost structures vary significantly and are least similar to those of the Apple App Store, they nonetheless provide interesting insights.

First, we reviewed products that are (or were) sold in both digital and physical formats. These products are most relevant because digitization has transformed how content producers can distribute their work, often reducing brick-and-mortar costs and allowing for a streamlined supply chain.

Depending on the business model, cost structure, and supply chain organization, we reviewed and analyzed either (1) the share of the retail price that flows to content providers, (2) the commission charged by intermediaries, or (3) the costs of producing and distributing several products as physical goods when those costs are directly incurred by the content producer. Results from the second and third measure can be compared most directly with Apple's commission rate (30% or 15%), while results from the first method can be compared most directly with the share of revenues that developers receive after commission (70% or 85%).

- When **video games** are sold in brick-and-mortar stores, developers and publishers jointly collect up to an estimated 45% of the retail price. The remaining 55% goes to retail and wholesale margins, other distribution costs, and royalty fees collected by console makers. By contrast, on most digital video game marketplaces, including the Apple App Store, developers and publishers receive 70% of sales, with 30% going to the digital marketplace commissions. (See Table 2.) Distribution costs on digital marketplaces are limited, as developers are able to self-publish.
- **Software** developers typically received 30–40% of the retail price of boxed software before the advent of digital software downloads. The remaining 60–70% went to distributors and retailers. By contrast, developers who distribute software via app stores or digital software distribution platforms typically collect 70–85% of the sales price. (See Table 1.)
- **Book** publishing program Kindle Direct Publishing (from Amazon) charges commission rates between 40% and 60% for paperback books, leaving a similar share for the content creators. Kindle Direct Publishing and Barnes & Noble typically charge a 30–35% commission to publish books digitally as eBooks. (See Table 3.) These commission rates are higher than the commissions charged by digital marketplaces, including the Apple App Store.
- For **newspapers**, physical production and distribution costs are estimated to be 50% of revenues, and for **magazines**, 60% of revenues. Newspapers and magazines sold as in-app purchases avoid these costs, and pay a 15–30% commission rate to distribute their product digitally. (See Table 1.)

Second, we reviewed examples of brick-and-mortar distribution of physical products. We included marketplaces that connect buyers and sellers and charge commissions, such as auction houses and consignment stores. Although these marketplaces are very different from online platforms like the Apple App Store, their business models have some resemblance to those of digital marketplaces. We also included more traditional examples of brick-and-mortar distribution, such as car dealerships and retail stores, reviewing costs and fees associated with selling via such physical distribution channels.

- **Art auction houses**, such as Sotheby's, Christie's, and Bonhams, charge various types of fees, including a buyer fee of 20–25% for amounts under \$4 million and a seller fee estimated at 10% on average. The sellers receive the rest.
- **Consignment stores** often charge commissions ranging between 50% and 75%.
- **Car dealerships** often serve as intermediaries that sell **used cars** from old to new owners, with margins reported to be at least 20%. This means that the former car owners typically receive approximately 80% of the eventual resale price upfront. Just as in online markets for digital goods, trust is often difficult to ensure in used car markets. As a result, certain dealerships offer car certifications programs, which include car inspections and certain warranties.¹⁶
- **Food manufacturers** pay fees to **retailers** for store placement, as well as other promotional fees, known as trade fees. These trade fees are estimated to account for 15–20% of the manufacturer's total sales revenue.

Digital marketplaces need rules and governance to thrive

It is widely recognized that the success of digital marketplaces depends on their ability to connect buyers and sellers and generate valuable interactions.¹⁷ Because trust and integrity are central to making buyers and sellers comfortable trading on the platform, digital marketplaces often employ common rules and enforcement strategies to foster such an environment. A lack of adequate policing and governance can undermine such trust and integrity, leading to an unsuccessful platform.¹⁸ Ridesharing apps perform background checks on drivers and use rating systems for drivers and riders. Apple, as mentioned above, uses a strict vetting process to review the apps, ensuring that they are safe, reliable, and bring value to customers.¹⁹

16 "Certified Pre-Owned Pros and Cons," *Kelley Blue Book* (2018).

17 See, e.g., Annabelle Gawer and Michael Cusumano, "How Companies Become Platform Leaders," *MIT Sloan Management Review* (January 2008); Avi Goldfarb and Catherine Tucker, "Digital Economics," *Journal of Economic Literature* (March 2019).

18 For example, in 1983, the video game industry crashed, causing more than 90% of game developers to go bankrupt. That collapse was linked to a proliferation of unreliable, low-quality games. However, Nintendo was able to resurrect the market a few years later, thanks to rules and policies aimed at expelling unauthorized games. These rules and policies were key to its success. See Kevin Boudreau and Andrei Hagiu, "Platform Rules: Multi-Sided Platforms As Regulators," in Annabelle Gawer (ed.) *Platforms, Markets and Innovation* (2009). Similarly, buyers are wary of using marketplaces riddled with scams.

19 Apple's App Store Review Guidelines include rules addressing (among other things) the security of apps, their performance and compatibility, their business model, and their design.

In addition, for their business model to be successful, digital marketplaces often have to rely on rules that prevent customers from free riding on their services. Free riding involves buyers and/or sellers avoiding fees after the platform has helped connect them, which means that the platform is not compensated for the successful match and the use of the platform's technology, tools, and services to facilitate and promote valuable transactions between buyers and sellers. A review of the policies and rules of large app stores and online marketplaces that distribute physical goods and services — marketplaces for which the risk for free riding is particularly high — shows that digital marketplaces routinely forbid behaviors aimed at avoiding fees.

In addition to the commission on paid apps and in-app purchases of digital content, services, and subscriptions, Apple imposes guidelines that govern the use of the App Store. Among those policies are rules about in-app purchases to prevent users and developers from free riding on Apple's App Store services and investments. Apps cannot explicitly steer app users away from in-app purchases — for example, by providing external links that bypass the App Store.

For apps that operate across multiple platforms, users can access content, subscriptions, and features acquired outside of the App Store ecosystem, e.g., through a website or an app on another platform. For instance, a subscription to Microsoft Office 365 purchased on a computer can be used in iOS apps without Apple collecting a commission. However, the same content, subscriptions, and features need to be available as in-app purchases within the app, except in the case of "reader apps." Reader apps can include magazines, newspapers, books, audio, music, video, access to professional databases, VoIP, cloud storage, and approved services such as classroom management. Examples of reader apps include Spotify, Netflix, and Kindle. Moreover, developers cannot direct iOS users to use another purchasing method, or discourage the use of in-app purchase.

App stores generally require developers to pay commission fees, use their in-app purchase mechanism, and impose rules designed to prevent free riding.

The most prominent app stores and software distribution platforms (Google Play Store, Amazon Appstore, Samsung's Galaxy Store, Microsoft Store, App Store) all use policies that require developers to pay commission fees, and use the platform's in-app payment system to purchase in-app digital products, with certain carve-outs for multi-platform apps. Additionally, most of those stores explicitly require that developers do not direct app users to make purchases outside of the store.

Similarly, many e-commerce marketplaces use rules to prevent free riding, including the following examples:

- Amazon, eBay, Etsy, and Walmart all have rules to address fee avoidance from sellers, including rules that forbid sellers from redirecting buyers to visit external sites.
- Airbnb's and VRBO's policies also address fee avoidance. For instance, Airbnb prohibits sellers from asking guests for contact information prior to booking, and controls how hosts and guests communicate.
- Uber and Lyft include restrictions that forbid drivers from charging for rides outside of the app or from doing "off-app" pickups.
- Freelancing services such as TaskRabbit, Upwork, and SoundBetter all use fee avoidance rules to ensure that payments are made through the platform.

About the Authors



Jonathan Borck, Ph.D., is a vice president at Analysis Group. Dr. Borck specializes in the application of statistics and economics in the areas of finance, health care, antitrust, and the environment. He is also an adjunct lecturer in public policy at the Harvard Kennedy School, where he teaches probability and statistics to master's degree students.



Juliette Caminade, Ph.D., is a manager at Analysis Group. Dr. Caminade specializes in the economic analysis of various antitrust issues and complex business disputes in multiple industries, including health care, pharmaceuticals, and consumer and industrial goods. Dr. Caminade has taught an undergraduate course on competition economics in the economics department of Dartmouth College.



Markus von Wartburg, Ph.D., is a vice president at Analysis Group. Dr. von Wartburg specializes in the application of econometric methods and microeconomic theory to complex problems in antitrust and competition, commercial litigation, media and telecommunications, finance, and intellectual property.

Analysis Group is one of the largest international economics consulting firms, with more than 1,000 professionals across 14 offices in North America, Europe, and Asia. Since 1981, Analysis Group has provided expertise in economics, finance, health care analytics, and strategy to top law firms, Fortune Global 500 companies, and government agencies worldwide.

Boston Chicago Dallas Denver Los Angeles Menlo Park New York
San Francisco Washington, DC ■ Beijing ■ Brussels ■ London ■ Montreal ■ Paris

Appendix A1: Commission Rates and Anti-circumvention Policies of App Stores and Software Distribution Platforms

Current Examples

Digital Marketplace	Commission	Anti-circumvention Policies
<p>[1] Google Play Store (Google's app store for certified Android devices)</p>	<ul style="list-style-type: none"> ▪ 30% for apps and in-app products ▪ Except 15% for subscriptions after 12 months ▪ One-time \$25 registration fee for developer account 	<p>For in-store purchases, Google’s Developer Policy Center stipulates, “[d]evelopers charging for apps and downloads from Google Play must use Google Play's payment system.” For in-app purchases, developers “must use Google Play In-app Billing as the method of payment” except if the payment is solely for physical products or “digital content that may be consumed outside the app itself (e.g. songs that can be played on other music players).”</p> <p>Additionally, the developer agreement stipulates that “You may not use Google Play to distribute or make available any Product that has a purpose that facilitates the distribution of software applications and games for use on Android devices outside of Google Play.”</p>
<p>[2] Amazon Appstore (App store for Amazon and Android devices)</p>	<ul style="list-style-type: none"> ▪ 30% for apps, in-app products, and in-app subscriptions ▪ Except 20% for movies and TV in-app subscriptions ▪ 30% of PC games and software retail price (or 80% of the list price if less) 	<p>Amazon’s Developer Services Agreement requires that if a “Mobile App charges end users for any Content intended to be used within [the] Mobile App, it may only do so by making that Content available as an In-App Product. Other than through our In-App Purchasing API or other methods we make available to [developers], [a] Mobile App may not facilitate, or direct customers to use, any other method of paying for Content intended to be used within your Mobile App.”</p>
<p>[3] Samsung Galaxy Store (App store for Samsung devices)</p>	<ul style="list-style-type: none"> ▪ 30% (or otherwise agreed-upon rate) 	<p>Samsung’s Terms and Conditions stipulate that “[y]ou shall not use customer information obtained from the Services to sell or distribute the Application without using the Services or STORE.”</p> <p>Additionally, “All apps must meet the requirements in order to pass publication review for apps to be available in Galaxy Store for download, and have paid app and in-app item sales supported.”</p>

Appendix A1: Commission Rates and Anti-circumvention Policies of App Stores and Software Distribution Platforms

Current Examples

Digital Marketplace	Commission	Anti-circumvention Policies
<p>[4] Microsoft Store (Digital content store for Windows devices)</p>	<ul style="list-style-type: none"> ▪ 30% of net receipts for games and in-app products in games ▪ 30% of net receipts for purchases in Microsoft Store for Business, Microsoft Store for Education, Microsoft Store on Windows 8 and Windows Phone 8 devices ▪ 15% of net receipts for all other products ▪ 5% between March 2019 and January 2020 for qualifying app developers and apps ▪ For Xbox purchases, see Appendix A2 ▪ One-time registration fee of \$19 for individual developer accounts and \$99 for company developer accounts 	<p>Microsoft's App Developer Agreement states that "[n]ew App and in-App Product submissions to the Store are required to use Microsoft's commerce engine to support purchase of any In-App Product(s) that are or can be consumed or used within [the] app."</p> <p>Microsoft Store Policies require that "[i]f your product includes in-product purchase, subscriptions, virtual currency, billing functionality or captures financial information ... You must use the Microsoft Store in-product purchase API to sell digital items or services that are consumed or used within your product. Your product may enable users to consume previously purchased digital content or services, but must not direct users to a purchase mechanism other than the Microsoft Store in-product purchase API."</p>
<p>[5] Aptoide (Open source app store for Android devices)</p>	<ul style="list-style-type: none"> ▪ 25% for certified publishers (or otherwise agreed upon rate) 	
<p>[6] LG SmartWorld (App store for LG devices)</p>	<ul style="list-style-type: none"> ▪ 30% (or otherwise agreed upon rate) 	

Appendix A1: Commission Rates and Anti-circumvention Policies of App Stores and Software Distribution Platforms

Current Examples

Digital Marketplace	Commission	Anti-circumvention Policies
<p>[7] Apple App Store (App store for Apple devices)</p>	<ul style="list-style-type: none"> ▪ 30% for apps and in-app products ▪ Except 15% for subscriptions after 12 months ▪ \$99 annual fee for the Apple Developer Program; \$299 annual fee for enterprise version 	<p>Apple's App Store guidelines stipulate: 1. "If you want to unlock features or functionality within your app ... you must use in-app purchase. Apps may not use their own mechanisms to unlock content or functionality, such as license keys,... Apps and their metadata may not include buttons, external links, or other calls to action that direct customers to purchasing mechanisms other than in-app purchase."</p> <p>2. "Multiplatform Services: Apps that operate across multiple platforms may allow users to access content, subscriptions, or features they have acquired in your app on other platforms or your web site,... provided those items are also available as in-app purchases within the app. You must not directly or indirectly target iOS users to use a purchasing method other than in-app purchase, and your general communications about other purchasing methods must not discourage use of in-app purchase."</p> <p>3. "Reader" Apps: "Apps may allow a user to access previously purchased content or content subscriptions (specifically: magazines, newspapers, books, audio, music, video, access to professional databases, VoIP, cloud storage, and approved services such as classroom management apps), provided that you agree not to directly or indirectly target iOS users to use a purchasing method other than in-app purchase, and your general communications about other purchasing methods are not designed to discourage use of in-app purchase."</p>

Appendix A1: Commission Rates and Anti-circumvention Policies of App Stores and Software Distribution Platforms

Historical Examples

Digital Marketplace	Commission
<p>[8] Windows Phone Store (App store for Windows devices, launched in 2011 and combined with Windows Store in 2015)</p>	<ul style="list-style-type: none"> ▪ 30% of net receipts, as of 2015 (pre-2015, 20% of app’s net receipts for net receipts amount over \$25,000)
<p>[9] BlackBerry World (App store for BlackBerry devices, launched in 2009 and shut down in 2019)</p>	<ul style="list-style-type: none"> ▪ 30% from 2011
<p>[10] Nokia Store (App store for Nokia devices, launched in 2009 and shut down in 2015)</p>	<ul style="list-style-type: none"> ▪ 30% for credit card payments, 40% for payments through operator billing, in 2011 ▪ 30% from 2012
<p>[11] Handango (App store for mobile devices, founded in 1999 and acquired in 2010)</p>	<ul style="list-style-type: none"> ▪ 30–40% from 2005

Note:

[1] Commission rates are based on publicly published terms and rates. Exceptions may apply.

Appendix A1: Commission Rates and Anti-circumvention Policies of App Stores and Software Distribution Platforms

App Stores in China

Digital Marketplace	Commission
[12] MyApp (Tencent's app store for Android devices)	<ul style="list-style-type: none"> ▪ 55% for games ▪ 30% for new Tencent games starting 2019*
[13] Huawei AppGallery (App store for Huawei devices)	<ul style="list-style-type: none"> ▪ 50% for game in-app purchases ▪ 30% for paid downloads and non-game in-app purchases ▪ 20% for education apps ▪ 30% for new Tencent games starting 2019*
[14] OPPO Software Store (App store for OPPO devices)	<ul style="list-style-type: none"> ▪ 52.5% for games
[15] Qihoo 360 (360 Mobile Assistant) (App store for Android devices)	<p>A tiered structure for games, calculated monthly:</p> <ul style="list-style-type: none"> ▪ 20% below ¥100,000 ▪ 40% from ¥100,000 to ¥1,000,000 ▪ 60% from ¥1,000,000 to ¥5,000,000 ▪ 64% over ¥5,000,000* ▪ 30% for new Tencent games starting 2019
[16] Vivo App Store (App store for Vivo devices)	<ul style="list-style-type: none"> ▪ 52.5% for games
[17] MIUI App Store (App store for Xiaomi devices)	<ul style="list-style-type: none"> ▪ 50% for games ▪ 30% for new Tencent games starting 2019*
[18] MM Store (China Mobile's app store for Android devices)	<ul style="list-style-type: none"> ▪ 52.5% ▪ +23.75% commission for promotion options

Notes:

[1] Commission rates are based on publicly published terms and rates. Exceptions may apply.

[2] * Denotes commission rate from third-party sources, not disclosed directly by the marketplace.

Appendix A2: Commission Rates of Video Game Digital Marketplaces

Digital Marketplace	Commission
<p>[19] Xbox (Digital content and video game store for Xbox devices)</p>	<ul style="list-style-type: none"> ▪ 30% for apps and in-app purchases, excluding non-game subscriptions ▪ 15% for non-game subscriptions
<p>[20] PlayStation (Digital content and video game store for PlayStation devices)</p>	<ul style="list-style-type: none"> ▪ ~30%*
<p>[21] Nintendo (Digital content and video game store for Nintendo devices)</p>	<ul style="list-style-type: none"> ▪ ~30%*
<p>[22] Epic Games (Video game store for PC and Mac devices)</p>	<ul style="list-style-type: none"> ▪ 12% for all games ▪ 5% royalty for games built on Epic's game engine "Unreal Engine" but sold on other platforms
<p>[23] Steam (Video game and hardware store)</p>	<ul style="list-style-type: none"> ▪ 30% for sales below \$10 million ▪ 25% between \$10 and \$50 million ▪ 20% above \$50 million

Appendix A2: Commission Rates of Video Game Digital Marketplaces

Digital Marketplace	Commission
[24] itch.io (Video game store for indie games)	<ul style="list-style-type: none"> ▪ Open revenue sharing model
[25] Game Jolt (Video game store for indie games)	<ul style="list-style-type: none"> ▪ 0–10% on game revenue ▪ 70% on advertising revenue*
[26] GOG.com (Film and video game store for Windows, Mac, and Linux devices)	<ul style="list-style-type: none"> ▪ 30% ▪ 40% option to help fund completion of game*
[27] Humble Store (Video game store for Windows, Mac, and Linux devices)	<ul style="list-style-type: none"> ▪ 25%
[28] GamersGate (Video game store for Windows and Mac devices)	<ul style="list-style-type: none"> ▪ 30%*

Notes:

[1] Commission rates are based on publicly published terms and rates. Exceptions may apply.

[2] * Denotes commission rate from third-party sources, not disclosed directly by the marketplace.

Appendix A3: Commission Rates of Marketplaces That Distribute Digital Content

Digital Marketplace	Commission
<p>[29] Anchor by Spotify (Platform for podcast production and distribution)</p>	<ul style="list-style-type: none"> ▪ 30% for sponsorships (advertising) ▪ 9.5% for listener donations (including processing fee)
<p>[30] Twitch (Livestreaming platform for video games)</p>	<ul style="list-style-type: none"> ▪ 50% on net subscription revenue ▪ Advertising commissions vary, with a minimum of 25%
<p>[31] Roku (Platform for media streaming on Roku devices)</p>	<ul style="list-style-type: none"> ▪ 20% on pay-to-install or in-channel purchases ▪ 30% of advertising inventory
<p>[32] YouTube (Video-sharing platform)</p>	<ul style="list-style-type: none"> ▪ 45% on advertising revenue*
<p>[33] Amazon Prime Video Direct (Video on demand platform)</p>	<ul style="list-style-type: none"> ▪ 50% on revenue from purchases and rentals* ▪ Royalties paid at fixed hourly rate for content viewed by Prime subscribers

Appendix A3: Commission Rates of Marketplaces That Distribute Digital Content

Digital Marketplace	Commission
[34] Kindle Direct Publishing (eBooks) (Amazon's platform for eBook publishing)	<ul style="list-style-type: none"> ▪ 30% for eBooks between \$2.99 and \$9.99 ▪ 65% for eBooks below \$2.99 and above \$9.99
[35] Nook (Barnes & Noble's platform for eBook purchasing and reading)	<ul style="list-style-type: none"> ▪ 35% for eBooks between \$2.99 and \$199.99 ▪ 60% for eBooks between \$0.99 and \$2.98
[36] Kobo (Platform for eBook and audiobook purchasing)	<ul style="list-style-type: none"> ▪ 30% for eBooks \$2.99 or above ▪ 55% for eBooks below \$2.99 ▪ 80% for public domain eBooks ▪ 68% of list price for subscription audiobook purchases ▪ 55% for a la carte audiobook purchases priced \$2.99 or above ▪ 65% for a la carte audiobook purchases priced below \$2.99
[37] Audible (Platform for audiobook production and distribution)	<ul style="list-style-type: none"> ▪ 60% for content distributed exclusively on Audible, Amazon, and iTunes (on top of production fees) ▪ 75% for non-exclusive content (on top of production fees) ▪ 80% under optional program with no up-front production fees
[38] Patreon (Platform for online creators to receive fan funding)	<ul style="list-style-type: none"> ▪ Three commission tiers of 7.9%, 10.9%, or 14.9%, which give access to differentiated features (includes payment processing fees)

Notes:

[1] Commission rates are based on publicly published terms and rates. Exceptions may apply.

[2] * Denotes commission rate from third-party sources, not disclosed directly by the marketplace.

Appendix A4: Commission Rates and Anti-circumvention Policies of e-Commerce Marketplaces

Digital Marketplace	Commission	Anti-circumvention Policies
General Online Retail		
<p>[39] Amazon (Online third-party marketplace)</p>	<ul style="list-style-type: none"> ▪ 8–17% for most product categories ▪ \$39.99/month account fee for professional sellers ▪ Additional fees for distribution and advertising may apply ▪ Buyers pay subscription fees for Prime membership 	<p>Amazon’s Selling Policies and Seller Code of Conduct stipulates “[y]ou may not attempt to circumvent the Amazon sales process or divert Amazon customers to another website. This means that you may not provide links or messages that prompt users to visit any external website or complete a transaction elsewhere.” While Amazon no longer prohibits sellers from offering products for lower prices on other platforms, it has been reported that they may penalize sellers who do so by making their product less visible (removing the “Buy Box”).</p>
<p>[40] eBay (Online third-party marketplace and auction platform)</p>	<ul style="list-style-type: none"> ▪ 10–12% for most product categories (\$750 maximum) ▪ Listing fee of \$0.35 per listing (excluding the first 50 listings per month) for most categories 	<p>eBay’s Fee Avoidance Policy states “[s]ellers are prohibited from activities that avoid eBay fees, intentionally or not. This includes:</p> <ul style="list-style-type: none"> - Making offers to buy or sell outside of eBay - Linking or promoting sites, items, or catalogs that can be used to order items outside of eBay”

Appendix A4: Commission Rates and Anti-circumvention Policies of e-Commerce Marketplaces

Digital Marketplace	Commission	Anti-circumvention Policies
<p>[41] Etsy (Online third-party marketplace for handmade and craft items)</p>	<ul style="list-style-type: none"> ▪ 5% commission on sales ▪ 3% + \$0.25 payment processing fee when using Etsy Payments ▪ 12% additional commission on sales made directly from Etsy advertising for sellers with at least \$10,000 of annual sales; 15% for sellers with less than \$10,000 of annual sales ▪ Listing fee of \$0.20 per listing 	<p>Etsy's Fee & Payment Policy states that “[a]ny action by a seller to avoid paying a fee is considered fee avoidance and is strictly prohibited by Etsy. This includes, for example, encouraging buyers to purchase an item in your Etsy shop through another venue. A transaction initiated on Etsy may not be completed off of Etsy.”</p>
<p>[42] Walmart (Online third-party marketplace)</p>	<ul style="list-style-type: none"> ▪ 6–15% depending on product category 	<p>Walmart's Prohibited Seller Activities and Operations page prohibits redirecting customer sales to outside websites, outside links in listings, and emails or calls to customers outside of fulfillment or customer service: “[A]ny attempt to circumvent any Walmart policy related to sales or to divert (redirect) Walmart customers to another website is prohibited ... Also prohibited is the inclusion of hyperlinks, URLs, or website titles in item listing content, description fields, and any seller email messages.”</p>
<p>[43] Poshmark (Online third-party marketplace for clothing and accessories)</p>	<ul style="list-style-type: none"> ▪ 20% commission on all sales over \$15 ▪ \$2.95 for sales under \$15 	

Appendix A4: Commission Rates and Anti-circumvention Policies of e-Commerce Marketplaces

Digital Marketplace	Commission	Anti-circumvention Policies
Travel		
<p>[44] Airbnb (Platform for connecting lodging hosts and guests)</p>	<ul style="list-style-type: none"> ▪ 17.2% (split between a 3% “host fee” and a 14.2% “guest fee”) ▪ 14–20% for hotels and software-connected property managers ▪ 20% for Experiences (including Online Experiences) 	<p>It is a violation of Airbnb's Terms of Service to “request, accept or make any payment for Listing Fees outside of the Airbnb Platform or Airbnb Payments.” Airbnb also prohibits asking guests for contact information prior to booking.</p>
<p>[45] VRBO/HomeAway (Platform for vacation home rentals)</p>	<ul style="list-style-type: none"> ▪ 18–19% (split between a 5% “owner fee,” a 3% payment processing fee, and a 10–11% “guest fee”)* 	<p>VRBO's Terms and Conditions require that “[m]embers agree not to encourage or advise a traveler to avoid or circumvent the service fee charged by HomeAway.”</p>
<p>[46] Booking.com (Online marketplace for hotels and accommodations)</p>	<ul style="list-style-type: none"> ▪ 15% (global average) 	<p>Booking.com's Legal and Security help page describes the rate parity rule as follows: “[T]he accommodation partner should provide Booking.com with the same or better rates, conditions & availability for the same accommodation with (at least) the same features, as made available by the accommodation partner on any (online and offline) channel.” This “wide parity” regime applies to select countries, including the US.</p>

Appendix A4: Commission Rates and Anti-circumvention Policies of e-Commerce Marketplaces

Digital Marketplace	Commission	Anti-circumvention Policies
Ridesharing		
<p>[47] Uber (Platform for connecting drivers and riders)</p>	<ul style="list-style-type: none"> About 25% commission (varies by market and other factors) and additional booking fees* 	<p>Uber's Community Guidelines ban off-app pickups or payments of fares outside the Uber system: "To enhance the safety of each experience, off-app pickups are prohibited. ... Riders and customers should not pay for trips or deliveries in cash, and riders should not request trips from drivers outside of the Uber system."</p>
<p>[48] Lyft (Platform for connecting drivers and riders)</p>	<ul style="list-style-type: none"> About 20% (varies by market and other factors)* 	<p>Lyft's Terms of Service state: "You will not, while providing the Rideshare Services, operate as a public or common carrier or taxi service, accept street hails, charge for rides (except as expressly provided in this Agreement), demand that a rider pay in cash, or use a credit card reader, such as a Square Reader, to accept payment."</p>
Food Delivery		
<p>[49] Uber Eats (Food delivery platform for connecting restaurants to customers)</p>	<ul style="list-style-type: none"> 30% for restaurants that use Uber Eats delivery services 15% otherwise (pickup orders or if restaurants do their own delivery) Additional service, delivery, and order fees may be charged to customers 	
<p>[50] Grubhub (Food delivery platform for connecting restaurants to customers)</p>	<ul style="list-style-type: none"> ~33% and above when using Grubhub delivery services (includes 3.05% processing fee) ~23% and above otherwise (includes 3.05% processing fee) Additional fees may be charged to customers 	

Appendix A4: Commission Rates and Anti-circumvention Policies of e-Commerce Marketplaces

Digital Marketplace	Commission	Anti-circumvention Policies
Freelancing Services		
<p>[51] TaskRabbit (Platform for connecting freelance workers with tasks)</p>	<ul style="list-style-type: none"> ▪ 15% 	<p>TaskRabbit's Payments on the TaskRabbit Platform page states that Taskers must refrain from “fee avoidance” such as “accepting a payment for hours worked outside of the platform,” and “giving a Client your contact information (phone number, email address, or website) for the purpose of an off-platform payment.”</p>
<p>[52] Upwork (Platform for connecting freelance workers with projects)</p>	<ul style="list-style-type: none"> ▪ For each client's lifetime billings: 20% below \$500, 10% between \$500 and \$10,000, 5% above \$10,000 ▪ Payment processing and administration fees may also apply 	<p>Upwork's User Agreement includes a “non-circumvention” section that requires that “for 24 months from the start of an Upwork Relationship, you agree to use the Site as your exclusive method to request, make, and receive all payments for work directly or indirectly with that person or arising out of your relationship with that person and not to circumvent the Payment Methods offered on the Site unless you pay a fee to take the relationship off of the Site (the “Conversion Fee”).”</p>
<p>[53] SoundBetter by Spotify (Platform for connecting artists with music industry professionals)</p>	<ul style="list-style-type: none"> ▪ 5%* 	<p>SoundBetter's Terms of Use specify that “after a project has been created/opened on the platform, you are strictly prohibited from negotiating and executing a freelance transaction related to that project outside of the platform. In addition, while you are a registered user of the platform, you may not enter into any agreement with any other users whom you met through the platform unless you do so through the platform.”</p>

Appendix A4: Commission Rates and Anti-circumvention Policies of e-Commerce Marketplaces

Digital Marketplace	Commission	Anti-circumvention Policies
Ticket Resale Exchanges		
<p>[54] StubHub (Platform for ticket reselling)</p>	<ul style="list-style-type: none"> ▪ ~37% (split between a 22% “buyer fee” and a 15% “seller fee”)* ▪ There is no set percentage for fees, which can change based on ticket price, time to event, updated event information, and supply and demand 	<p>StubHub's Global User Agreement specifies that users will not “contact or invite contact with other StubHub users for any reason other than the purpose for which you received the StubHub user’s contact information or solicit sales outside of StubHub.”</p>
<p>[55] Ticketmaster (Platform for ticket reselling)</p>	<ul style="list-style-type: none"> ▪ ~31% (split between a 17% “buyer fee” and a 14% “seller fee”)* 	

Notes:

[1] Commission rates are based on publicly published terms and rates. Exceptions may apply.

[2] * Denotes commission rate from third-party sources, not disclosed directly by the marketplace.

Appendix A5: Brick-and-Mortar Production, Distribution, and Marketplaces

Products Sold in Both Physical and Digital Formats

[56] Paperbacks (Kindle Direct Publishing) (Platform for paperback book publishing)	<ul style="list-style-type: none">▪ 40% commission when sold on Amazon marketplaces▪ 60% otherwise▪ Costs of printing physical books are not included in the commissions
[57] Video games (Physical video games sold via brick-and-mortar stores)	Video game developers and publishers jointly collect an estimated 45% of the retail price of games sold in brick-and-mortar stores.*
[58] Newspaper and magazine publishing (Production and distribution of physical newspapers and magazines)	Newspapers' and magazines' physical production and distribution costs are estimated to be around 50% and close to 60% of their revenue, respectively.*
[59] Boxed software (Historical production and distribution of physical installable software)	Software developers received 30–40% of the sale price of software before incurring production costs (disks, printing, duplication, packaging, shipping). The remaining 60–70% was captured by distributors and retailers.*

Appendix A5: Brick-and-Mortar Production, Distribution, and Marketplaces

Auction Houses

[60] Sotheby's (Broker of art, jewelry, real estate, and collectibles)	<ul style="list-style-type: none">▪ Seller's commission:<ul style="list-style-type: none">- 10% of the hammer price for most auctions- Additional 2% if sold for over the high estimate agreed upon▪ Buyer's premium for all sales categories excluding wine:<ul style="list-style-type: none">- 25% for sales amounts up to \$400,000- 20% between \$400,000 and \$4,000,000- 13.9% above \$4,000,000
[61] Christie's (Broker of art, antiques and interiors, jewelry, and wine)	<ul style="list-style-type: none">▪ Seller's commission: Fixed percentage of the hammer price (rate undisclosed; industry standard is 10%)▪ Buyer's premium for all sales categories excluding wine:<ul style="list-style-type: none">- 25% for sales amounts up to \$300,000- 20% between \$300,000 and \$4,000,000- 13.5% above \$4,000,000
[62] Bonhams (Broker of art and antiques)	<ul style="list-style-type: none">▪ Seller's commission: Decided in agreement with consignor▪ Buyer's premium for most sales categories:<ul style="list-style-type: none">- 27.5% for sales amounts up to \$3,000- 25% between \$3,000 and \$400,000- 20% between \$400,000 and \$4,000,000- 13.9% above \$4,000,000

Appendix A5: Brick-and-Mortar Production, Distribution, and Marketplaces

Physical Consignment Stores

<p>[63] Buffalo Exchange (for used clothes and accessories)</p>	<ul style="list-style-type: none"> ▪ 70–75% commission (50% for store credit)
<p>[64] Crossroads Trading (for used clothes and accessories)</p>	<ul style="list-style-type: none"> ▪ 70% commission (50% for store credit)
<p>[65] Beacon's Closet (for used clothes and accessories)</p>	<ul style="list-style-type: none"> ▪ 65% commission (45% for store credit)
<p>[66] Play It Again Sports (for used fitness equipment and sports goods)</p>	<ul style="list-style-type: none"> ▪ 50–70% commission
<p>[67] Wasteland (for used clothes and accessories)</p>	<ul style="list-style-type: none"> ▪ 65% commission

Other

<p>[68] Used car market (Sale of used cars at car dealerships)</p>	<p>Margins on used cars sold by dealerships are reported to be at least 20%. Car certification programs such as Certified Pre-Owned can further increase the margins on those sales.*</p>
<p>[69] Food manufacturers (Sale of consumer packaged goods at grocery and retail stores)</p>	<p>Trade fees account for 15–20% of the manufacturer's total sales revenue. These fees include placement fees to ensure shelf space in stores as well as other promotional fees paid to retailers.*</p>

Notes:

[1] Commission rates are based on publicly published terms and rates. Exceptions may apply.

[2] * Denotes commission rate from third-party sources, not disclosed directly by the marketplace.

Appendix B: Sources

App Stores and Software Distribution Platforms

[1] Google Play Store

"Google Play Developer Distribution Agreement," *Google Play*, effective as of June 12, 2020, available at <https://play.google.com/about/developer-distribution-agreement.html>.

"How to use the Play Console," *Play Console Help*, available at <https://support.google.com/googleplay/android-developer/answer/6112435>.

"Payments," *Play Console Help*, available at <https://support.google.com/googleplay/android-developer/answer/9858738>.

"Service fees," *Play Console Help*, available at <https://support.google.com/googleplay/android-developer/answer/112622>.

[2] Amazon Appstore

"Amazon Developer Services Agreement," *Amazon Developer*, last updated July 7, 2020, available at <https://developer.amazon.com/support/legal/da>.

"Reach Millions of New Customers," *Amazon Appstore*, available at <https://developer.amazon.com/apps-and-games>.

[3] Samsung Galaxy Store

"App Distribution Guide," *Samsung Developers*, available at <https://developer.samsung.com/galaxy-store/distribution-guide.html>.

"FAQ," *Samsung Developers*, available at <https://developer.samsung.com/galaxy-games/faq.html>.

"Terms and Conditions," *Samsung Galaxy Store Seller Portal*, effective September 20, 2019, available at <https://seller.samsungapps.com/help/termsAndConditions.as>.

[4] Microsoft Store

"App Developer Agreement," *Microsoft Store*, effective July 10, 2020, available at <https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4o4bH>.

"Get Registered," *Microsoft Store*, available at <https://developer.microsoft.com/en-us/store/register/>.

"Microsoft Store Policies," *Windows Dev Center*, October 1, 2019, available at <https://docs.microsoft.com/en-us/windows/uwp/publish/store-policies>.

Microsoft Store Team, "Updated Microsoft Store App Developer Agreement: New Revenue Share," *Windows Blog*, March 6, 2019, available at <https://blogs.windows.com/windowsdeveloper/2019/03/06/updated-microsoft-store-app-developer-agreement-new-revenue-share/>.

Appendix B: Sources

[5] Aptoide

"Aptoide Publisher Distribution Agreement," *Aptoide*, available at <https://en.aptoide.com/company/legal>.

[6] LG SmartWorld

"Terms & Conditions" *LG SmartWorld Content Management System*, effective April 29, 2020, available at <http://www.lgworld.com/cms/lgworld.cms.etc.retrieveConditionsList.dev>.

[7] Apple App Store

"Purchase and Activation," *Apple Developer Support*, available at <https://developer.apple.com/support/purchase-activation/>.

"Dedicated to the best store experience for everyone," *Apple*, available at <https://www.apple.com/ios/app-store/principles-practices/>.

"App Store Review Guidelines," *Apple Developer*, available at <https://developer.apple.com/app-store/review/guidelines/>.

[8] Windows Phone Store

"App Developer Agreement: Windows Store and Windows Phone Store," *Windows Dev Center*, effective October 23, 2014, available at <https://web.archive.org/web/20150118071753/http://msdn.microsoft.com/en-us/library/windows/apps/hh694058.aspx>.

"Microsoft Launches Windows Phone Marketplace Web Store," *Wired*, September 27, 2011, available at <https://www.wired.com/2011/09/windows-phone-marketplace/>.

"Windows Store Trends – September 2015," *Windows Blog*, October 12, 2015, available at <https://blogs.windows.com/windowsdeveloper/2015/10/12/windows-store-trends-september-2015/>.

[9] BlackBerry World

"BlackBerry will kill its app store at the end of 2019, support BB10 for 'at least two' more years," *Beat*, December 15, 2017, available at <https://venturebeat.com/2017/12/15/blackberry-will-kill-its-app-store-at-the-end-of-2019-support-bb10-for-at-least-two-more-years/>.

"Frequently Asked Questions," *BlackBerry Developer*, available at <https://developer.blackberry.com/devzone/blackberryworld/faq.html>.

Sacco, AI, "BlackBerry App World 2.0 Unveiled: Images, Details," *CIO*, June 16, 2010, available at <https://www.cio.com/article/2417468/>.

Appendix B: Sources

[10] Nokia Store

Low, Aloysius, "Microsoft to shut down Nokia Store for feature phones," *CNET*, November 18, 2014, available at <https://www.cnet.com/news/microsoft-to-shut-down-nokia-store-for-feature-phones/>.

"Ovi Store opens for business," *Nokia*, May 26, 2009, available at <https://www.nokia.com/about-us/news/releases/2009/05/26/ovi-store-opens-for-business/>.

"Terms and Conditions," *Nokia Developer*, available at <https://web.archive.org/web/20120305135103/http://info.publish.nokia.com/?p=422>.

"Terms and Conditions," *Nokia Ovi*, available at <https://web.archive.org/web/20110602082212/https://publish.ovi.com/login>.

[11] Handango

"Handango, the original app store," *Open Attitude Blog*, January 14, 2010, available at <https://openattitude.com/2010/01/14/handango-the-original-app-store/>.

"Information," *Handango*, available at https://web.archive.org/web/20051212113802/http://developer.handango.com/DeveloperInformation.jsp?siteId=1&CKey=DEV_FAQ.

Savov, Vlad, "PocketGear acquires Handango, becomes world's largest cross-platform app store," *Engadget*, February 23, 2010, available at <https://www.engadget.com/2010-02-23-pocketgear-acquires-handango-becomes-worlds-largest-cross-plat.html>.

[12] MyApp

"Modes of Collaboration." *Tencent Open Platform*, available at <https://wiki.open.qq.com/wiki/%E5%90%88%E4%BD%9C%E6%96%B9%E5%BC%8F>.

"Seismic Shift, Redividing the Pie? Tencent Demand 70% Profit Share from Other Stores for Its New Games," *Gamelook*, July 6, 2019, available at <https://mp.weixin.qq.com/s/HUbdJAvunLrCiHfvtAgEA>.

[13] Huawei AppGallery

"Huawei App Store Joint Operation Service Agreement," Huawei App Distribution Document Center, updated June 30, 2020, available at <https://developer.huawei.com/consumer/cn/doc/20204>.

"Seismic Shift, Redividing the Pie? Tencent Demand 70% Profit Share from Other Stores for Its New Games," *Gamelook*, July 6, 2019, available at <https://mp.weixin.qq.com/s/HUbdJAvunLrCiHfvtAgEA>.

[14] OPPO Software Store

"Process to Establish Game Access," *OPPO Open Platform*, available at <https://open.oppomobile.com/wiki/index#id=73452>.

Appendix B: Sources

[15] Qihoo 360 (360 Mobile Assistant)

"Game Agreement," *360 Open Platform*, available at <http://opengame.360.cn/wiki/8>.

"Seismic Shift, Redividing the Pie? Tencent Demand 70% Profit Share from Other Stores for Its New Games," *Gamelook*, July 6, 2019, available at <https://mp.weixin.qq.com/s/HUbdJAvunLrCiHfvtAgEA>.

[16] Vivo App Store

"Process to Establish Game Access," VIVO Open Platform, available at <https://dev.vivo.com.cn/documentCenter/doc/251>.

[17] MIUI App Store

Yanqu Chen, "Unbelievable, Xiaomi Is Grabbing Business from Tencent's Honor of Kings," *Jiemian*, July 25, 2017, available at <https://www.jiemian.com/article/1497121.html>.

"Seismic Shift, Redividing the Pie? Tencent Demand 70% Profit Share from Other Stores for Its New Games," *Gamelook*, July 6, 2019, available at <https://mp.weixin.qq.com/s/HUbdJAvunLrCiHfvtAgEA>.

[18] MM Store

"Mobile Market Developer Service Agreement," *MM Store*, available at http://dev.10086.cn/resource/%E3%80%8AMobile_Market%E5%BC%80%E5%8F%91%E8%80%85%E6%9C%8D%E5%8A%A1%E5%8D%8F%E8%AE%AEV2.6%E3%80%8B.pdf.

Appendix B: Sources

Video Game Digital Marketplaces

[19] Xbox

"App Developer Agreement," *Microsoft Store*, July 10, 2020, <https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4o4bH>.

[20] PlayStation

"Report: Steam's 30% Cut Is Actually the Industry Standard," *IGN*, October 7, 2019, available at <https://www.ign.com/articles/2019/10/07/report-steams-30-cut-is-actually-the-industry-standard>.

[21] Nintendo

"Report: Steam's 30% Cut Is Actually the Industry Standard," *IGN*, October 7, 2019, available at <https://www.ign.com/articles/2019/10/07/report-steams-30-cut-is-actually-the-industry-standard>.

[22] Epic Games

"Welcome to Epic Games," *Epic Games*, available at <https://www.epicgames.com/store/en-US/about>.

[23] Steam

"New Revenue Share Tiers and other updates to the Steam Distribution Agreement," *Steam*, November 30, 2018, available at <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

Nick Statt, "Valve's new Steam revenue agreement gives more money to game developers," *The Verge*, November 30, 2018, available at <https://www.theverge.com/2018/11/30/18120577/valve-steam-game-marketplace-revenue-split-new-rules-competition>.

"73% of devs don't think Steam's 30% cut is fair," *Game World Observer*, January 29, 2020, available at <https://gameworldobserver.com/2020/01/29/steams-revenue-split/>.

Appendix B: Sources

[24] itch.io

"Accepting Payments and Getting Paid," *itch.io*, available at <https://itch.io/docs/creators/payments>.

[25] Game Jolt

"5 best platforms to publish your indie game," *Codes Wholesale*, 2018, available at <https://codeswholesale.com/blog/5-best-platforms-to-publish-your-indie-game/>.

"Marketplace," *Game Jolt*, available at <https://gamejolt.com/marketplace>.

[26] GOG.com

"11 Places to Publish & Release Your Indie Game," *Ninichi*, September 12, 2017, available at <https://ninichimusic.com/blog/2017/9/1/11-places-to-publish-release-your-indie-game>.

[27] Humble Store

"What is Humble Bundle?" *Humble Bundle*, available at <https://www.humblebundle.com/about>.

"Humble Bundle Developer Resources" *Humble Bundle*, available at <https://www.humblebundle.com/developer>.

[28] GamersGate

"11 Places to Publish & Release Your Indie Game," *Ninichi*, September 12, 2017, available at <https://ninichimusic.com/blog/2017/9/1/11-places-to-publish-release-your-indie-game>.

Appendix B: Sources

Marketplaces That Distribute Digital Content

[29] Anchor by Spotify

"Listener Support: accept monthly donations from your listeners," *Anchor*, July 16, 2018, available at <https://help.anchor.fm/hc/en-us/articles/360007452031>.

"Cashing out from your wallet," *Anchor*, August 8, 2018, available at <https://help.anchor.fm/hc/en-us/articles/360012563112>.

Anchor, "Introducing Anchor Listener Support: Now you can get paid to podcast," *Medium*, August 9, 2018, available at <https://medium.com/anchor/introducing-anchor-listener-support-now-you-can-get-paid-to-podcast-64aefa5cfa9d>.

[30] Twitch

"Twitch Affiliate Agreement," *twitch*, October 7, 2019, available at <https://www.twitch.tv/p/legal/affiliate-agreement/>.

[31] Roku

Evan Niu, "How Roku Makes Its Money," *The Motley Fool*, September 8, 2017, available at <https://www.fool.com/investing/2017/09/08/how-roku-makes-its-money.aspx>.

"Roku Developers- Video Advertisements," *Roku Developers*, available at <https://developer.roku.com/docs/features/monetization/video-advertisements.md>.

"Roku Developers- Roku billing services," *Roku*, April 7, 2016, available at <https://blog.roku.com/developer/roku-billing-services>.

[32] YouTube

Eric Rosenberg, "How YouTube Ad Revenue Works," *Investopedia*, June 4, 2020, available at <https://www.investopedia.com/articles/personal-finance/032615/how-youtube-ad-revenue-works.asp>.

[33] Amazon Prime Video Direct

Todd Spangler, "Amazon's Prime Video Direct Is Cutting Royalty Fees for Low-Engagement Content," *Variety*, March 15, 2019, available at <https://variety.com/2019/digital/news/amazon-prime-video-direct-cut-royalty-fees-1203163736/>.

[34] Kindle Direct Publishing (eBooks)

"eBook Royalty Options," *Kindle Direct Publishing*, available at https://kdp.amazon.com/en_US/help/topic/G200644210.

"List Price Requirements," *Kindle Direct Publishing*, available at https://kdp.amazon.com/en_US/help/topic/G200634560.

David Wogahn, "The 2020 Guide to Amazon Fees and Royalties for Kindle eBooks and KDP Print," *Author Imprints*, March 10, 2020, available at <https://www.authorimprints.com/amazon-kdp-royalty-pricing/>.

Appendix B: Sources

[35] Nook

"Barnes & Noble Press Royalty and Payment Terms," *Barnes&Noble Press*, available at <https://press.barnesandnoble.com/legal/royalty-payment-terms>.

[36] Kobo

Tara Cremin, "What will my earnings be?," *Kobo Writing Life*, updated June 26, 2020, available at <https://kobowritinglife.zendesk.com/hc/en-us/articles/115001056548-What-will-my-earnings-be->.

[37] Audible

"Audiobooks Through ACX," *Kindle Direct Publishing*, available at https://kdp.amazon.com/en_US/help/topic/G201014330.

"Production Earnings and Costs," *ACX*, available at <https://www.acx.com/help/what-s-the-deal/200497690>.

[38] Patreon

"We only succeed when you succeed," *Patreon*, available at <https://www.patreon.com/product/pricing>.

Appendix B: Sources

e-Commerce Marketplaces

[39] Amazon

"Let's talk numbers," *Amazon*, available at https://www.bonhams.com/how_to_buy/16398/.

"Selling Policies and Seller Code of Conduct," *Amazon Seller Central*, available at https://sellercentral.amazon.com/gp/help/external/G1801?language=en_US.

"SEC Filing Details," *Amazon*, available at <https://ir.aboutamazon.com/sec-filings/sec-filings-details/default.aspx?FilingId=13875159>.

Fareeha Ali, "Amazon Prime has 112 million members in the US," *DigitalCommerce360*, January 24, 2020, available at <https://www.digitalcommerce360.com/article/amazon-prime-membership/>.

Karen Weise, "Prime Power: How Amazon Squeezes the Business Behind Its Store," *The New York Times*, December 19, 2019, available at <https://www.nytimes.com/2019/12/19/technology/amazon-sellers.html>.

Joseph Hansen, "The 12 Reasons Your Amazon Listing Has a Missing Buy Box—and How to Get It Back," *BuyBox Experts*, April 16, 2019, available at <https://www.buyboxexperts.com/12-reasons-amazon-listing-missing-buy-box-how-get-back/>.

[40] eBay

"Selling fees," *ebay*, available at <https://www.ebay.com/help/selling/fees-credits-invoices/selling-fees?id=4364>.

"eBay fee avoidance policy," *ebay*, available at <https://www.ebay.com/help/policies/selling-policies/selling-practices-policy/ebay-fee-avoidance-policy?id=4354>.

[41] Etsy

"Millions of shoppers can't wait to see what you have in store," *Etsy*, available at <https://www.etsy.com/sell>.

"Fees & Payments Policy," *Etsy*, available at <https://www.etsy.com/legal/fees/>.

Appendix B: Sources

[42] Walmart

"Referral Fees for Contract Categories," *Walmart*, available at <https://sellerhelp.walmart.com/seller/s/guide?article=000006011>.

"Prohibited Seller Activities and Operations," *Walmart*, available at <https://sellerhelp.walmart.com/s/guide?article=000007968>.

[43] Poshmark

"What are the fees for selling on Poshmark?" *Poshmark*, available at <https://support.poshmark.com/s/article/297755057>.

[44] Airbnb

"What is the Airbnb service fee?," *Airbnb Help Center*, available at <https://www.airbnb.com/help/article/1857/what-is-the-airbnb-service-fee>.

"How do I host an online experience?," *Airbnb Help Center*, available at <https://www.airbnb.com/help/article/2785/how-do-i-host-an-online-experience>.

"Terms of Service," *Airbnb*, available at <https://www.airbnb.com/terms>.

"Airbnb's Off-Platform Policy," *Airbnb Help Center*, available at <https://www.airbnb.com/help/article/2799/airbnbs-offplatform-policy>.

[45] VRBO/HomeAway

"How is the pay-per-booking fee calculated?," *VRBO*, available at <https://help.vrbo.com/articles/How-is-the-booking-fee-calculated>.

Jay Whiteley, "Vrbo vs. Airbnb vs. Booking.com: Which Vacation Rental Listing Site is Best?," *Evolve Vacation Rental*, January 31, 2020, available at <https://evolvevacationrental.com/blog/homeowner-tips/homeaway-vs-vrbo-vs-airbnb-vs-flipkey-vs-tripadvisor-vs-booking/>.

"Terms and Conditions," *Vrbo*, available at <https://www.vrbo.com/legal/terms-and-conditions>.

Appendix B: Sources

[46] Booking.com

"How much commission do I pay?," *Booking.com Partner Hub*, updated July 15, 2020, available at <https://partner.booking.com/en-us/help/commission-invoices-tax/how-much-commission-do-i-pay>.

"How does parity work?," *Booking.com Partner Hub*, updated June 30, 2020, available at <https://partner.booking.com/en-us/help/legal-security/how-does-parity-work>.

[47] Uber

"Tracking your earnings," *Uber*, available at <https://www.uber.com/gh/en/drive/basics/tracking-your-earnings/>.

Brett Helling, "Uber Fees: How Much Does Uber Pay, Actually?," *Ridester.com*, last updated March 24, 2020, available at <https://www.ridester.com/uber-fees/>.

"Uber Community Guidelines," *Uber*, last modified April 22, 2020, available at <https://www.uber.com/legal/en/document/?name=general-community-guidelines&country=united-states&lang=en>.

[48] Lyft

"Getting Started With Lyft," *Ride Share Guy*, available at <https://therideshareguy.com/getting-started-with-lyft/>.

"Lyft Terms of Service," *Lyft*, last updated November 27, 2019, available at <https://www.lyft.com/terms>.

[49] UberEats

"Uber Eats U.S. Merchant Terms and Conditions," *Uber*, effective April 29, 2020, available at <https://www.uber.com/legal/en/document/?country=united-states&lang=en&name=uber-eats-merchant-terms-and-conditions>.

"How do fees work on Uber Eats?," *Uber Help*, available at <https://help.uber.com/ubereats/article/how-do-fees-work-on-uber-eats?nodeId=65d229e2-a2b4-4fa0-b10f-b36c9546cf55>.

"0% Service Fee for Pickup," *Uber Help*, available at <https://help.uber.com/restaurants/article/0-service-fee-for-pickup?nodeId=613e8d1e-c9b7-4dff-9541-5cff075e3cc5>.

[50] Grubhub

"Fees," *Grubhub For Restaurants*, available at <https://learn.grubhub.com/archives/basics/what-fees-does-grubhub-charge>.

"Grubhub Pricing," *Grubhub For Restaurants*, available at https://learn.grubhub.com/wp-content/uploads/2018/08/Grubhub_One-Pager_Pricing-Overview_Final.pdf.

Appendix B: Sources

[51] TaskRabbit

"What's the TaskRabbit Service Fee?" *TaskRabbit Support*, available at <https://support.taskrabbit.com/hc/en-us/articles/204411610>.

"Payments on the TaskRabbit Platform," *TaskRabbit Support*, <https://support.taskrabbit.com/hc/en-us/articles/207814426>.

[52] Upwork

"How It Works," *Upwork*, available at <https://www.upwork.com/i/how-it-works/freelancer/>.

"User Agreement," *Upwork Legal Center*, updated July 13, 2020, available at <https://www.upwork.com/legal>.

"Fee and ACH Authorization Agreement," *Upwork Legal*, effective July 13, 2020, available at <https://www.upwork.com/legal#fees>.

[53] SoundBetter by Spotify

Larry Crane, "SoundBetter," *Tape Op*, January/February 2019, available at <https://tapeop.com/interviews/129/soundbetter/>.

"Terms of Use for Soundbetter," *SoundBetter*, available at <https://soundbetter.com/terms-of-use>.

[54] StubHub

"That's the Ticket, An FTC Workshop about Online Ticket Sales," *FTC*, June 11, 2019, available at https://www.ftc.gov/system/files/documents/public_events/1413898/slides-online-events-tickets-6-11-19.pdf.

"Stubhub Marketplace Global User Agreement," *Stubhub*, updated March 25, 2020, available at <https://www.stubhub.com/legal>.

[55] Ticketmaster

"That's the Ticket, An FTC Workshop about Online Ticket Sales," *FTC*, June 11, 2019, available at https://www.ftc.gov/system/files/documents/public_events/1413898/slides-online-events-tickets-6-11-19.pdf.

Appendix B: Sources

Brick-and-Mortar Production, Distribution, and Marketplaces

[56] Paperbacks (Kindle Direct Publishing)

"Paperback Royalty," *Kindle Direct Publishing*, available at https://kdp.amazon.com/en_US/help/topic/G201834330.

[57] Video games

"Anatomy of a \$60 Video Game," *Los Angeles Times Blog*, February 19, 2010, <https://latimesblogs.latimes.com/entertainmentnewsbuzz/2010/02/anatomy-of-a-60-dollar-video-game.html>.

Daidj, Nabyla, *Developing Strategic Business Models and Competitive Advantage in the Digital Sector*, IGI Global (2014), p. 284

Marks, Tom, "Report: Steam's 30% Cut Is Actually the Industry Standard," *IGN*, October 7, 2019, available at <https://www.ign.com/articles/2019/10/07/report-steams-30-cut-is-actually-the-industry-standard>.

Tomaselli, Fernando Claro, Luiz Carlo Di Serio, and Luciel Henrique de Oliveira, "Value Chain Management and Competitive Strategy in the Home Video Game Industry," *POMS 19th Annual Conference*, May 9 to May 12, 2008, available at <https://www.pomsmeetings.org/ConfPapers/008/008-0286.pdf>, pp. 21-22.

Yin-Poole, Wesley, "Where does my money go?" *Eurogamer*, December 19, 2011, available at <https://www.eurogamer.net/articles/2011-01-10-where-does-my-money-go-article>.

[58] Newspaper and magazine publishing

Vogel, Harold L., *Entertainment Industry Economics: A Guide for Financial Analysis*, Cambridge University Press (2010), p. 371.

[59] Boxed software

"Selling software: Where have all the business models gone?" *ZDNet*, available at <https://www.zdnet.com/article/selling-software-where-have-all-the-business-models-gone/>.

[60] Sotheby's

"Sotheby's Buyer's Premium Chart," *Sotheby's*, effective February 25, 2019, available at <http://www.sothebys.com/content/dam/sothebys/PDFs/buyerspremium/February-2019-Buyers-Premium.pdf?locale=en>.

"Glossary," *Sotheby's*, available at <https://www.sothebys.com/en/glossary>.

Appendix B: Sources

[61] Christie's

"Selling at Christie's," *Christie's*, available at <https://www.christies.com/selling-services/selling-guide/before-the-sale>.

"Buying at Christie's," *Christie's*, available at <https://www.christies.com/buying-services/buying-guide/financial-information/>.

Graham Bowley, "The (Auction) House Doesn't Always Win," *The New York Times*, January 15, 2014, available at <https://www.nytimes.com/2014/01/16/arts/design/christies-and-sothebys-woo-big-sellers-with-a-cut.html>.

[62] Bonhams

"How to sell with us," Bonhams, available at <https://sell.bonhams.com/>.

"How to buy," *Bonhams*, available at https://www.bonhams.com/how_to_buy/16398/.

[63] Buffalo Exchange

"Sell By Mail," *Buffalo Exchange*, available at <https://sellbymail.buffaloexchange.com/>.

"New Selling Process," *Buffalo Exchange*, available at <https://www.buffaloexchange.com/how-it-works/>.

[64] Crossroads Trading

"New Shopping & Selling Procedures," *CROSSROADS*, available at <https://crossroadstrading.com/buy-sell-trade-2020/>.

[65] Beacon's Closet

"How to buy sell trade," *Beacon's Closet*, available at <https://web.archive.org/web/20191011064906/https://beaconscloset.com/pages/how-to-buy-sell-trade>.

[66] Play It Again Sports

"How We Buy & Sell Used Sports Equipment," *Play It Again Sports*, available at <https://www.playitagainsports.com/home/howitworks>.

[67] Wasteland

"Selling To Wasteland," *Wasteland*, available at <http://www.shopwasteland.com/selling>.

Appendix B: Sources

[68] Used car market

Brett Camp, Kate McKay, "How to Negotiate For A Used Car," *Jalopnik*, September 23, 2010, available at <https://jalopnik.com/how-to-negotiate-for-a-used-car-5570813>.

Doug Demuro, "How Much More Does a CPO Car Cost?" *Autotrader*, October 31, 2014, available at <https://www.autotrader.com/car-shopping/how-much-more-does-cpo-car-cost-231072>.

Mike Richards, "What is The Markup on a Used Car? How is it Calculated?" *Auto Auction Mall*, May 23, 2019, available at <https://www.autoauctionmall.com/learning-center/what-is-the-markup-on-a-used-car-how-calculated/>.

John M. Vincent, Nate Parsons, "Certified Pre-Owned Cars vs. Non-Certified Used Cars," *U.S. News*, January 31, 2020, available at <https://cars.usnews.com/cars-trucks/certified-pre-owned-vs-non-certified-used>.

[69] Food manufacturers

Gary Rivlin, "Rigged: Supermarket Shelves For Sale," Center For Science In The Public Interest, September 2016, available at https://cspinet.org/sites/default/files/attachment/Rigged%20report_0.pdf.