

Expert Report of Steven Schwartz, Ph.D.

(Dkt No. 182-1)

Part 1 of 3

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UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

**IN RE: VALVE ANTITRUST
LITIGATION**

Case No. 2:21-cv-00563-JCC

**CLASS CERTIFICATION
EXPERT REPORT OF
Steven Schwartz, Ph.D.**

Steven Schwartz, Ph.D.

February 8, 2024

Summary of Contents

1.	Introduction	1
2.	Summary of Conclusions	5
3.	Background	6
4.	Relevant Market Definition and Monopoly Power	31
5.	Valve’s Maintenance of Monopoly Power	93
6.	Anticompetitive Effects of Valve’s Monopoly Power	120
7.	Economic Assessment of Class-Wide Impact	146
8.	Economic Quantification of Class-Wide Damages	191

Table of Contents

1.	Introduction	1
1.1.	Credentials	1
1.2.	Nature of engagement and assignment.....	1
1.3.	Overview of materials considered	3
2.	Summary of Conclusions	5
3.	Background	6
3.1.	Overview	6
3.2.	Video games	6
3.2.1.	History and overview of video game industry	7
3.2.2.	PC gaming distribution	8
3.2.3.	PC game developers and publishers.....	12
3.3.	Valve’s Steam platform.....	15
3.3.1.	Overview.....	15
3.3.2.	Steam Wallet.....	22
3.3.3.	Marketing benefits	23
3.3.4.	Valve’s commission system on Steam.....	26
3.3.5.	Steam Keys	28
4.	Relevant Market Definition and Monopoly Power.....	31
4.1.	Defining the relevant market.....	31
4.1.1.	Implementing the HMT/SSNIP and <i>Brown Shoe</i> factors	31
4.1.2.	Reference product and candidate market	36
4.1.3.	Considerations of potentially substitutable products in the relevant market.....	41
4.1.4.	Relevant geographic market.....	74
4.2.	Economic assessment of monopoly power.....	76
4.2.1.	Measurement of monopoly power in the relevant market.....	76
4.2.2.	Valve’s supracompetitive commission rate is direct evidence of monopoly power.....	79
4.2.3.	Valve’s high and sustained market share over time is economic evidence of monopoly power.....	80
4.2.4.	Valve’s high and sustained profitability over time is economic evidence of monopoly power.....	84
5.	Valve’s Maintenance of Monopoly Power	93
5.1.	Valve’s PMFN Policy	93
5.1.1.	What is a PMFN?	94
5.1.2.	Valve’s PMFN Policy.....	96
5.1.3.	Valve’s PMFN Policy is a barrier to entry.....	102

5.2.	Enforcement of the PMFN Policy.....	104
5.2.1.	Valve’s early enforcement of the PMFN Policy.....	104
5.2.2.	Valve’s continued enforcement of the PMFN Policy.....	111
6.	Anticompetitive Effects of Valve’s Monopoly Power.....	120
6.1.	Valve’s supracompetitive commission rate to publishers.....	120
6.2.	Harm to ability of entrants to effectively compete.....	124
6.3.	Reduction in variety, quality, and innovation.....	135
6.3.1.	Reduction in platform variety and quality.....	136
6.3.2.	Reduction in PC desktop game variety.....	141
6.3.3.	Lack of innovation on Steam.....	144
7.	Economic Assessment of Class-Wide Impact.....	146
7.1.	Overview.....	146
7.2.	Platform Competition Model approach.....	147
7.2.1.	Platform Competition Model.....	149
7.2.2.	Numeric analysis.....	158
7.3.	Yardstick approach.....	163
7.3.1.	Identification of benchmarks.....	164
7.3.2.	But-for take rate.....	169
7.4.	Empirical approach.....	171
7.5.	Assessment of potential counterarguments.....	179
7.5.1.	Publishers with [REDACTED] rates are impacted.....	179
7.5.2.	Selective enforcement of PMFN impacts all publishers.....	183
7.5.3.	Freeriding and showrooming.....	185
7.5.4.	Consumer regret.....	188
8.	Economic Quantification of Class-Wide Damages.....	191
8.1.	Overview.....	191
8.2.	The Landes and Posner (1981) model.....	194
8.3.	Estimation of the but-for price.....	197
8.3.1.	Steam’s real-world Lerner Index.....	198
8.3.2.	Linear demand modeling.....	199
8.3.3.	Parallel shift in Steam demand.....	201
8.3.4.	But-for market share.....	203
8.3.5.	But-for commission rate.....	205
8.4.	Pass-through rate(s).....	206
8.4.1.	Overview.....	206
8.4.2.	Empirical estimate.....	209
8.5.	Overcharge and damages.....	214
8.5.1.	Overcharge and damages are calculated formulaically to estimate individual putative class member damages.....	215

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8.5.2.	Estimation of overcharge.....	217
8.5.3.	Estimation of damages.....	218

Table of Appendices

<u>Section A</u>	<u>Economic Theory Appendix</u>
A.1	Boik and Corts Analysis Details
A.2	Analytic Approach Algebraic Details
A.3	Lerner Index and Boik and Corts Equivalence
A.4	Boik and Corts Modification to Analytic Approach
<u>Section B</u>	<u>Data Processing Appendix</u>
B.1	Valve Productions

Table of Attachments

<u>Section A</u>	<u>Expert Materials</u>
Attachment A-1	Curriculum Vitae of Steven Schwartz, Ph.D.
Attachment A-2	Materials Considered
<u>Section B</u>	<u>Relevant Market Definition</u>
Attachment B-1	Third-Party Digital PC Game Distribution Platforms
<u>Section C</u>	<u>██████████ SDAs</u>
Attachment C-1	Valve's ██████████ Steam Distribution Agreements (SDAs)
<u>Section D</u>	<u>Valve Financials</u>
Attachment D-1	Steam P&Ls, 2003–2021
Attachment D-2	Adjustments to Steam P&L for Contributors Payments
Attachment D-3	Steam P&Ls Based on Commissions, 2003–2021
Attachment D-4	Admin Expense Allocation, 2003–2021
Attachment D-5	Steam P&Ls Based on Commissions with Allocated Admin Expenses, 2003–2021
Attachment D-6	Valve Profit Margins and Commission by Year, 2009–2021
Attachment D-7	Steam's Costs per Transaction Revenues, 2017–2021
Attachment D-8	Valve Employee Counts (2017–2021)
<u>Section E</u>	<u>Real-World Market Share</u>
Attachment E-1	Steam Market Share – Total Third-Party Transaction Value, 2017–2021
Attachment E-2	Epic P&L, 2017–2022
Attachment E-3	Third-Party Humble GMV Data, 2012–2023
Attachment E-4	Target Digital PC Sales Data, 2017–2023
Attachment E-5	Best Buy Sales Data
Attachment E-6	GOG.com Revenue, 2017–2021
Attachment E-7	Third-Party PC Market Share Data for Select Participants, 2018–2019
Attachment E-8	Microsoft PC Third-Party Revenue, 2017–2021

<u>Section F</u>	<u>Survey Data</u>
Attachment F-1	Developer Steam Survey
<u>Section G</u>	<u>Transaction Data Output</u>
Attachment G-1	Annual Count of Paid and Free Games as Identified in Valve Transaction Data, 2005–2022
Attachment G-2	Count of Annual Game Releases in Valve Transaction Data, 2004–2022
Attachment G-3	Publisher Share of Steam Revenues, January 2008–December 2012
Attachment G-4	Top-10 Transaction Prices on Steam, January 28, 2017–December 31, 2022
Attachment G-5	Revenue and Overcharges for Global Publishers
Attachment G-6	Revenue and Overcharges for Dark Catt Studios Holdings, Inc. and Wolfire Games
Attachment G-7	Estimated Damages for Class, Dark Catt Studios Holdings, Inc. and Wolfire Games
<u>Section X</u>	<u>Data</u>
Attachment X-1	Humble Sales Data, 2010–2023
Attachment X-2	Best Buy Summary Sales Data, 2003–2023
Attachment X-3	Target Sales Data, 2017–2021
Attachment X-4	Microsoft Gaming Content Sales–U.S., 2017–2023
Attachment X-5	Microsoft Gaming Content Sales–R.O.W., 2017–2023
Attachment X-6	Employee Headcount and Gross Pay Data, 2003–2021

1. Introduction

1.1. Credentials

- (1) I am an economist and Managing Director with Intensity, a Secretariat company (“Intensity”),¹ based in Dallas, TX. I have been employed by Intensity since January 2021. Until December 31, 2020, I was an economist and Vice President with Charles River Associates, Inc. (“CRAI”); I joined CRAI in June 2015. Prior to my employment at CRAI, I was a Managing Director and head of the economics practice with Alvarez & Marsal Global Forensics and Disputes (“A&M-GFD”), based in New York, NY. I was employed by A&M-GFD from December 2011 until June 2015. Before joining A&M-GFD, I was an economist and Senior Vice President (final title) with NERA Economic Consulting (“NERA”), based in White Plains, NY. I began working at NERA in July 1984.
- (2) I received my Bachelor’s Degree from Wesleyan University (Middletown, CT) in 1976. I graduated *cum laude* and with Departmental Honors in Economics. I earned my M.A. and Ph.D. degrees in Economics from the University of Maryland (College Park, MD) in 1978 and 1980, respectively. After I completed my graduate studies, I served as a member of the economics faculty at Miami University (Oxford, OH) from 1980–1984. My complete educational and employment history is set forth in my CV, attached to this report as Attachment A-1. My CV contains a list of all publications I have authored in the past 10 years and a list of all cases in which, during the past 4 years, I have testified as an expert at trial or by deposition.

1.2. Nature of engagement and assignment

- (3) Intensity has been retained by Plaintiffs’ Counsel on behalf of Wolfire Games, LLC (“Wolfire”), Dark Catt Studios Holdings, Inc. (“DCS Holdings”), Dark Catt Studios Interactive LLC (“DCS Interactive”) (together with DCS Holdings, “Dark Catt”), and a putative class of Plaintiffs (together, “Plaintiffs”) in the above-captioned litigation against Valve Corporation (“Valve”). The putative class is defined as follows:²

¹ On February 1, 2023, Intensity, LLC was acquired by Secretariat International and began operating as Intensity, a Secretariat Company. On January 1, 2024, my employment was transferred to Secretariat Advisors; for now, Intensity continues to operate as Intensity, a Secretariat Company. That is likely to change during the first or second quarters of 2024, at which point Intensity will operate as Secretariat Advisors.

² Consolidated Second Amended Class Action Complaint, 3/23/2023, ¶ 375.

All persons or entities who, directly or through an agent, paid a commission to Valve in connection with the sale or use of a game on the Steam platform on or after January 28, 2017, and continuing through the present until the effects of its scheme are eliminated (the “Class Period”), and where either (1) the person or entity was based in the United States and its territories or (2) the game was purchased or acquired by a United States-based consumer during the Class Period. Excluded from the Class are (a) Defendant, its parents, subsidiaries, affiliate entities, and employees, and (b) the Court and its personnel.

- (4) The putative class members in this case are those who directly paid commissions (referred to as revenue share by Valve³) to Valve. In many cases, these are game publishers. Game publishers support game developers by providing funding for game developers to bring creative visions to life, distributing developed games on platforms like Steam and Epic Games Store, and assisting in developing strategies for monetization of games through downloadable content and microtransactions.⁴ Game developers are persons or organizations that create a game’s storyline and look, while “programmers within the organization write the code and create the artwork to implement the developer’s vision behind the game.”⁵ Sometimes, a single entity assumes both the game publisher and developer roles.⁶
- (5) I was asked to evaluate and, if called upon, to testify concerning the following three issues:
- Are economic methodologies available to define an appropriate relevant market and assess Valve’s market power in that relevant market?
 - Are there economic methodologies that can be used to demonstrate the class-wide impact of Valve’s conduct on putative class members?

³ See, for example:

NC Interactive, Steam Distribution Agreement with Valve, 5/1/2020 (NCI_Valve_0001245–61, at NCI_Valve_0001251). (See Section 6 of the Agreement.)

Valve, “Valve Corporation Steam Distribution Agreement – Online Version,” undated (VALVE_ANT_0000008–15, at VALVE_ANT_0000011), available at Erik Peterson, Dep. Tr., 11/15/2023, Exhibit 295. (See Section 6 of the Agreement.)

⁴ Polydin Studio, Unveiling the Roles of Game Developers and Publishers, <https://polydin.com/game-developers-and-publishers/> (accessed 10/18/2023).

Microtransactions refer to small, one-off in-game purchases of items such as “upgrades, coins, or cosmetic enhancements.” See:

Economics Online, “The Economics of Microtransactions,” 8/3/2023, <https://www.economicsonline.co.uk/definitions/the-rise-of-microtransactions-in-video-games.html/>.

⁵ HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

⁶ Consolidated Second Amended Class Action Complaint, 3/23/2023, ¶ 3. (“In the PC gaming industry, the ‘developer’ is typically the entity that creates the game while the entity that markets the game is typically referred to as the game ‘publisher.’ Sometimes a single company undertakes both of these functions.”)

- Are economic methodologies available to calculate class-wide damages?

- (6) As detailed herein, I conclude the answer to all three questions is yes.
- (7) Intensity is currently being compensated at a rate of \$1,100 per hour for my work in this matter. Prior to January 2024, Intensity was compensated at an hourly rate of \$1,050. Intensity is being compensated for time spent by others on my team at rates that are lower than my hourly rate. Intensity's compensation is not dependent on either my conclusions, the substance of my testimony, or the outcome of this matter.

1.3. Overview of materials considered

- (8) In carrying out my assignment, I considered and relied upon my education, professional background and experience and, as well, the documents and data cited throughout this report and the accompanying exhibits. In forming my opinions, I, and members of my team working under my supervision and direction reviewed documents and data produced by both parties in discovery, deposition testimony, and the expert reports, and written testimony.⁷ I held discussions with Dr. Joost Rietveld, Ph.D., Associate Professor at University College London School of Management; David Rosen, CEO and Lead Programmer at Wolfire Games; and John Robb, CEO at Dark Catt Studios. I have also considered documents and other materials, which are cited herein and/or listed in Attachment A-2.
- (9) My analysis is ongoing, and my conclusions are based on information currently available to me. If any additional information or testimony—including from any of the experts in this matter—becomes available to me, I reserve the right to consider such information or testimony and to supplement this report and my opinions, as appropriate. I also reserve the right to supplement my report in light of any additional fact discovery, analysis and opinions set forth by other experts, and/or trial testimony, and to respond to other experts and the testimony of any fact witnesses.
- (10) In addition, should I be asked to testify to my opinions at the trial of this matter, I reserve the right to prepare exhibits that summarize portions of my analysis and my opinions and to prepare demonstrative exhibits that help to explain elements of my analysis and opinions. I have not yet selected any exhibits I may ultimately use. In addition, I reserve the right to use

⁷ In the discussion that follows describing the analytical process or materials reviewed, references to "I" should be interpreted as referring to me and members of my team working under my supervision and direction.

animations, demonstratives, enlargements of actual attachments, and other information in order to convey my opinions.

- (11) The entirety of my report, including attachments and referenced/considered materials, provides the basis for my analysis and conclusions. The organizational structure of the report is for convenience. To the extent that facts, economic analysis, and other considerations overlap, I generally discuss such issues only once for the sake of brevity. Neither the specific order in which each issue is addressed nor the organization of my report or attachments affects the ultimate outcome of my analysis.

2. Summary of Conclusions

- (12) In the report below, I present my analysis and conclusions. A summary of some of my principal conclusions is set forth here.
- a. Valve’s pricing and content policies function as a platform most favored nation policy (“PMFN Policy”). Valve enforces the PMFN on both pricing and content, including by delisting titles from Steam that do not adhere to the PMFN Policy.
 - b. The relevant antitrust market for purposes of my analysis is a worldwide market for third-party digital PC game distribution via platforms.
 - c. Valve has monopoly power in the relevant market, evidenced by its high and sustained market share, high and sustained profitability, and Valve-imposed barriers to entry to the market through the PMFN Policy, all of which allow Valve to charge a supracompetitive rate to publishers. Valve’s monopoly power harms competition in the market, including through its ability to set and sustain that supracompetitive price to publishers, deter entry and/or reduce the competitiveness of potential platforms, and reduce the variety, choice, and innovation in the market.
 - d. Valve’s exercise of its monopoly power—through its enforcement of the Steam PMFN Policy—has harmed and continues to harm competition in the market, by enabling Valve to set and sustain supracompetitive prices, reduce output, and reduce variety, choice, and innovation in the market.
 - e. Valve’s exercise and maintenance of its monopoly power has harmed and continues to harm putative class members, *i.e.*, the publishers listing their games on Steam.
 - f. Absent the PMFN Policy, vigorous competition would exist within the market, leading to lower, more competitive commission rates for all or virtually all class members. This conclusion is supported by analyses based on several different analytical methods, including: (1) my Platform Competition Model, (2) my yardstick analysis, and (3) my empirical analysis. My Landes and Posner model—used for damages—further confirms my conclusion that all or virtually all class members are harmed.
 - g. Absent the PMFN Policy, the lower commission rates would result in publishers passing through some savings from the lower commission rates to consumers in the form of lower game prices. Lower fees to publishers and lower prices to users result in a net lower price across the platform.
 - h. Absent the PMFN Policy, the but-for commission rate would be 17.7%, resulting in class-wide damages of between \$2.9 billion and \$3.1 billion.
 - i. The issues I analyze in this case can be analyzed using evidence common across putative class members. In particular, damages from the commission overcharge can be calculated in a formulaic way using standard economic approaches that rely on evidence common to the putative class.

3. Background

3.1. Overview

- (13) In this section, I introduce several industry and market concepts that are relevant throughout my report. I start with an overview of video games and then discuss the distribution of PC games—the type of video game most relevant to this case. I also discuss the Steam platform, which is at issue in this case, Steam’s content and price parity policies, and the effects of those parity policies on the putative class.

3.2. Video games

- (14) A video game is an “electronic or computerized game” that displays images on a screen when the game is being played.⁸ Beside the visual display, video games use “other systems to provide interaction and information to the player[.]” including sound through speakers and vibration.⁹ Modern video games have a combination of “3D art, computer-generated effects, architecture, artificial intelligence (AI), sound effects, dramatic performances, music, storytelling, and, most importantly, interactivity.”¹⁰ This interactivity enables video game players to explore a range of different environments such as “simulated reality” and “artistic expressions[.]”¹¹ Video games are played on personal computers (“PC”), hand-held devices, such as the Nintendo Switch Lite and Sony’s PlayStation Portal, and consoles, including Sony’s PlayStation and Microsoft’s Xbox.¹²

⁸ Encyclopedia, Video Game, <https://www.encyclopedia.com/education/culture-magazines/video-game> (accessed 10/20/2023).

⁹ New World Encyclopedia, Video Game, https://www.newworldencyclopedia.org/entry/Video_game (accessed 10/20/2023).

¹⁰ New World Encyclopedia, Video Game, https://www.newworldencyclopedia.org/entry/Video_game (accessed 10/20/2023).

¹¹ New World Encyclopedia, Video Game, https://www.newworldencyclopedia.org/entry/Video_game (accessed 10/20/2023).

¹² Encyclopedia, Video Game, <https://www.encyclopedia.com/education/culture-magazines/video-game> (accessed 10/20/2023).

Nintendo Website, Nintendo Switch Lite, <https://www.nintendo.com/us/store/products/nintendo-switch-lite-turquoise/> (accessed 2/5/2024).

PlayStation Website, PlayStation Portal, <https://www.playstation.com/en-us/accessories/playstation-portal-remote-player/> (accessed 2/5/2024).

NY Times, “The Best Game Consoles,” 11/22/2023, <https://www.nytimes.com/wirecutter/reviews/best-game-consoles/>.

- (15) Video games are categorized into genres based on “factors such as method of game play, types of goals, and more.”¹³ Valve categorizes games on Steam as: Action, Adventure, Arcade, Card, Casual, Early Access, Free-to-play, Family, First-person shooter, Indie, Massively multiplayer online, Platformer, Puzzle, Role-playing game, Real-time strategy, Simulation, Sports, and Strategy.¹⁴

3.2.1. History and overview of video game industry

- (16) There are several ways for users to play a video game. PC gaming includes games that are designed for and played on PCs.¹⁵ These games typically cannot be played on other devices such as consoles and mobile devices unless the user purchases a second copy/version that is compatible with the non-PC device.¹⁶ PC games are played on both laptop and desktop computers and on various operating systems (*e.g.*, Windows, MacOS, Linux).¹⁷

¹³ New World Encyclopedia, Video Game, https://www.newworldencyclopedia.org/entry/Video_game (accessed 10/20/2023).

¹⁴ Valve, App Genre Data, c. 2023 (VALVE_ANT_2579263.xlsx).

F2P stands for free-to-play. See: Techopedia, “What is Free-to-Play (F2P)?,” 9/12/2023, <https://www.techopedia.com/definition/27039/free-to-play-f2p>. (“Free-to-play (F2P) is a gaming model that allows a user to download and play without needing a subscription or having to buy it upfront.”)

FPS stands for first-person shooter. See: Techopedia, “First Person Shooter,” 10/4/2011, <https://www.techopedia.com/definition/241/first-person-shooter-fps>. (“A first person shooter (FPS) is a genre of action video game that is played from the point of view of the protagonist.”)

MMO stands for massively multiplayer online. See: Plarium, “What Is an MMO, What Is an MMORPG and the Difference Between Them,” 11/20/2023, <https://plarium.com/en/blog/difference-between-mmo-and-mmorpgs/>. (“An MMO is a ‘Massively Multiplayer Online’ game.”)

RPG stands for Role-playing game. See: TechTarget Website, Role-Playing Game (RPG), <https://www.techtarget.com/whatis/definition/role-playing-game-RPG> (accessed 1/22/2024). (“A role-playing game (RPG) is a game in which each participant assumes the role of a character that can interact within the game’s imaginary world.”)

RTS stands for Real-time strategy. See: Techopedia, “Real-Time Strategy,” 4/21/2015, <https://www.techopedia.com/definition/1923/real-time-strategy-rts>. (“Real-time strategy (RTS) refers to a time-based video game that centers around using resources to build units and defeat an opponent.”)

¹⁵ CellularNews, “What is Personal Computer Game (PC Game)?,” 9/21/2023, <https://cellularnews.com/definitions/what-is-a-personal-computer-pc/>.

¹⁶ Note that certain game distribution methods may allow a game to be played on a console and a PC. See, for example: Xbox, Xbox Play Anywhere, <https://www.xbox.com/en-US/games/xbox-play-anywhere> (accessed 12/8/2023).

¹⁷ Yahoo Finance, “Global PC Games Market Size Analysis, Share Revenue Estimated to Grow at a CAGR of 1.21%,” 6/29/2023, <https://finance.yahoo.com/news/global-pc-games-market-size-124000948.html>. (“A personal computer game or PC game is a form of video game that is to be played on a personal desktop or a laptop.”)

RoyalCDKeys, “The Best Operating System for Gaming PC,” 10/10/2022, <https://royalcdkeys.com/en-us/blogs/news/the-best-operating-system-for-gaming-pc>. (“Besides all the choices you have to make while choosing a gaming PC, the operating system is surely of great importance.” “Of the options, three different Operating Systems are, by far, the most used. They are Microsoft Windows, Linux, and Mac OS.”)

3.2.2. PC gaming distribution

- (17) Initially, PC games were distributed using physical media, such as floppy disks or CD-ROMs.¹⁸ Physical PC games were especially popular in the mid to late-1990s.¹⁹ Released in 1994, *Myst* was the first CD-ROM game to sell in excess of one million copies and has been credited with driving the adoption of CD-ROMs as a gaming medium.²⁰ Physical PC game sales have declined significantly since 1996, falling from 41% to just 6% of console and PC physical game sales in 2016.²¹
- (18) Today, digital distribution dominates the PC game market.²² In 2014, DFC Intelligence, a market research company, reported that, globally, approximately 92% of PC games sold were distributed digitally.²³ In 2020, 98% of total sales revenue for the global PC gaming industry came from digital PC game sales.²⁴ Data from PwC show that in the US PC gaming market, physical PC game sell-through revenue has declined whereas digital PC game sell-through revenue has increased.²⁵

¹⁸ WIRED, "Sept. 24, 1993: Beautiful Ushers in Era of CD-ROM Gaming," 9/23/2008, <https://www.wired.com/2008/09/sept-24-1993-beautiful-ushers-in-era-of-cd-rom-gaming/>.

Issuu Website, CD-ROM Games, https://issuu.com/cmfoto8/docs/the_video_game_explosion__a_history (accessed 1/3/2024). ("While it became a standard relatively recently, disc-based storage goes a long way back in the history of video game distribution. The term encompasses a wide range of technologies, from magnetic floppy discs, analog laserdiscs, and a variety of digital optical media. Of the latter, the CD-ROM enjoyed the strongest following and the longest life span; as of 2006, a significant number of PC games are still burned on CDs.")

¹⁹ Issuu Website, CD-ROM Games, https://issuu.com/cmfoto8/docs/the_video_game_explosion__a_history (accessed 1/3/2024). ("When it became the most common video game distribution format in the mid-1990s, the compact disk was already standard in the music industry.")

²⁰ Kent, Steven L. (2001), *The Ultimate History of Video Games: from Pong to Pokémon and Beyond*, 1st ed., New York: Three Rivers Press, at 456–457. ("In 1994, Broderbund released a PC version. It became a hit, too. *Myst* went on to become the first CD-ROM game to sell over one million units. It remained on the computer game's bestsellers list for three years. Broderbund eventually sold four million copies of the game.")

²¹ Van Dreunen, Joost (2020), *One Up: Creativity, Competition, and the Global Business of Video Games*, 1st ed., New York City: Columbia University Press, at 131–132.

²² GameRant, "91% of 2020's Game Industry Revenue Was Digital," 12/24/2020, <https://gamerant.com/2020-game-industry-revenue-digital/>. ("The vast majority of PC gaming has been digital for a long time through sites like GOG, Steam, and dev-specific stores like the Epic Games Store. Only about 2% of its revenue came from boxed PC games. Most PC titles don't even have a physical release anymore or have a very limited one.")

²³ IGN Website, "Analyst: 92 Percent of PC Game Sales Are Digital," 8/19/2014, <https://me.ign.com/en/pc/87259/news/analyst-92-percent-of-pc-game-sales-are-digital>.

²⁴ GameRant, "91% of 2020's Game Industry Revenue Was Digital," 12/24/2020, <https://gamerant.com/2020-game-industry-revenue-digital/>. ("The vast majority of PC gaming has been digital for a long time through sites like GOG, Steam, and dev-specific stores like the Epic Games Store. Only about 2% of its revenue came from boxed PC games. Most PC titles don't even have a physical release anymore or have a very limited one.")

²⁵ Venture Beat, "Traditional Gaming Shrinks to 26.7% of Game and Esports Revenue as Overall U.S. Sales Head to \$72B By 2027," 6/18/2023, <https://venturebeat.com/games/u-s-game-and-esports-revenue-to-grow-from-54-1b-to-72b-by->

- (19) The PC game market was originally dominated by brick-and-mortar retailers such as GameStop and Best Buy. In the early 2000s, digital PC game distributors entered the marketplace and began to compete with brick-and-mortar retailers.²⁶ The emergence of these digital competitors was due, in part, to improvements in high-speed internet.²⁷ In 2001, the first such competitor, Stardock, released Stardock Central, the first digital distribution platform.²⁸ However, it wasn’t until Valve’s transition to digital distribution with the launch of Steam in 2003 and its release of *Half-Life 2* the following year that users began to widely utilize digital distribution.²⁹ See Section 3.3.1 for further discussion of Steam’s launch. Other digital distribution platforms for PC games entered the marketplace around the same time, including Direct2Drive (2004), GamersGate (2006), Games for Windows – Live (2007), Good Old Games (“GOG”) (2008), Impulse (2008), and Green Man Gaming (2009).³⁰ These early

2027-pwc/. (Referencing a 2023 PwC report: The sell-through revenue of physical PC games in the US has decreased since 2018, and will continue to decrease until reaching zero in 2025. Revenue from digital PC games and online/microtransaction has increased since 2018 and will continue to grow.)

²⁶ Van Dreunen, Joost (2020), *One Up: Creativity, Competition, and the Global Business of Video Games*, 1st ed., New York City: Columbia University Press, at 135–137.

²⁷ CNET, “Game Makers Testing Online Distribution,” 4/1/2006, <https://www.cnet.com/tech/gaming/game-makers-testing-online-distribution/>.

Van Dreunen, Joost (2020), *One Up: Creativity, Competition, and the Global Business of Video Games*, 1st ed., New York City: Columbia University Press, at 4, 137.

Gameopedia, “The Decline of Physical Games and the Rise of Digital Distribution,” 9/26/2022, <https://www.gameopedia.com/decline-of-physical-games/>.

²⁸ Gameopedia, “The Decline of Physical Games and the Rise of Digital Distribution,” 9/26/2022, <https://www.gameopedia.com/decline-of-physical-games/>.

²⁹ Gameopedia, “The Decline of Physical Games and the Rise of Digital Distribution,” 9/26/2022, <https://www.gameopedia.com/decline-of-physical-games/>.

Teknos Associates, The Battle for Digital Gaming Distribution, <https://www.teknosassociates.com/the-battle-for-digital-gaming-distribution/> (accessed 1/30/2023).

LinkedIn, “The Rise of Steam: A Case Study on the Most Dominant Force in Gaming,” 11/11/2021, <https://www.linkedin.com/pulse/rise-steam-case-study-most-dominant-force-gaming-ryan-yuen/>.

³⁰ IGN, “IGN Entertainment Launches Direct2Drive Digital Retail Store,” 9/7/2004, <https://corp.ign.com/press/press/2004/ign-entertainment-launches-direct2drive-digital-retail-store>.

See also: Wolfire, Emails Regarding Overgrowth, 7/30/2009–9/11/2009 (WOLFIRE_00053558–72, at WOLFIRE_00053570). (“Launched in October 2004, D2D allows consumers to conveniently purchase and download the latest premium PC games[.]”)

GamersGate, Buy and Play Games, accessed via Internet Archive (as displayed on 6/13/2006), <https://web.archive.org/web/20060613001742/https://www.gamersgate.com/> (accessed 12/14/2023). (The earliest date for GamersGate website’s copyright is 2006 and the website was copyrighted by Paradox Interactive, as shown by “© 2006 Paradox Interactive AB.”)

Forbes, “An Interview With Paradox Interactive CEO Fred Wester On ‘Indie’ Publishing and the Future of the Video Game Industry,” 1/16/2013, <https://www.forbes.com/sites/erikkain/2013/01/16/an-interview-with-paradox-interactive-ceo-fred-wester-on-indie-publishing-and-the-future-of-the-gaming-industry/?sh=3803f32265c5>. (“What was the reasoning

market participants, along with newer platforms, make up a small share of the overall PC gaming market at issue in this matter and are discussed in Section 4.1.2.

- (20) The vast majority of PC games currently sold through (physical) retailers such as GameStop, GAME, and Amazon are actually merely download codes that users can redeem on their PCs.³¹ These codes allow consumers to download the game directly onto their PCs or access the game on a digital platform such as Steam. Valve’s Chief Operating Officer, Scott Lynch, testified that this form of physical distribution is still different from digital distribution, because users buying a PC game at retail have to “either physically go somewhere to purchase it or it could be shipped to their home” versus digital distribution “where you would [just] download it[.]”³² While some games are still sold on physical media such as discs, they are limited and expected to continue declining.³³

behind launching GamersGate? Has it been a success? We wanted to reach gamers directly. When I launched GamersGate in 2006, people still believed digital download was 10 years into the future.”)

Microsoft, “Microsoft Unites Xbox and PC Gamers with Debut of Games for Windows — LIVE,” 3/14/2007, <https://news.microsoft.com/2007/03/14/microsoft-unites-xbox-and-pc-gamers-with-debut-of-games-for-windows-live/>.

CD Projekt, Company History, <https://www.cdprojekt.com/en/capital-group/history/> (accessed 12/15/2023).

Stardock, “Impulse to Deliver Next-Generation PC Platform,” 6/14/2008, <https://www.stardock.com/blog/314940/impulse-to-deliver-next-generation-pc-platform>. (“Impulse is being launched in three phases: Phase 1: The initial launch on June 17th to coincide with the release of The Political Machine 2008 (www.politicalmachine.com) will have the features described in the guided tour.”)

See also: Wolfire, “Impulse: the Next Generation Digital Platform,” undated (WOLFIRE_00053407–22, at WOLFIRE_00053408). (“Launched in 2008, Impulse is a digital distribution platform for the Windows PC that has been designed to directly address many of these problems for both developers and consumers.”)

Green Man Gaming, About Green Man Gaming, <https://corporate.greenmangaming.com/about-us/> (accessed 12/15/2023). (“The idea for Green Man Gaming sprung up in 2009 when our founder, Paul, was catching up with Lee, one of the founding members of the company, at the ‘Green Man’ pub in Riding House Street in London.” “An entrepreneur since 2001, Paul founded Green Man Gaming in 2009[.]”)

³¹ Scott Lynch, Dep. Tr., 10/12/2023, at 80:8–23. (“Q. I know Valve doesn’t [distribute their games at retail]. My question is about the consumer’s perspective. If they have an option to buy from GameStop versus Steam, my question is you have no idea what those differences are today? A. It just depends on what they’re buying. Q. A game. A. Like a Nintendo Switch game or a PC game at retail? Q. Yeah, PC game. A. I don’t know what people do at retail. I don’t think there are many retail packaged goods. I think that usually buying a game is getting a code now for PC. So they get a code.”)

See also: Expert Report of Joost Rietveld (“Rietveld Report”), 2/8/2024, §X1.C.

³² Scott Lynch, Dep. Tr., 10/12/2023, at 80:24–81:8. (“Q. A consumer who’s buying at retail has to either physically go somewhere to purchase it or it could be shipped to their home; right? A. Yeah. Q. And that’s different from online distribution where you would download it; right? A. Yeah. The transaction, you know, payment and getting the thing and what other things you might get with the game at retail, you know, are different, the physical parts of it and where you do the transaction.”)

³³ VentureBeat, “Traditional Gaming Shrinks to 26.7% of Game and Esports Revenue as Overall U.S. Sales Head to \$72B by 2027 | PwC,” 6/18/2023, <https://venturebeat.com/games/u-s-game-and-esports-revenue-to-grow-from-54-1b-to-72b-by-2027-pwc/>. (See “Physical PC games sell-through (\$ mn)” line item; it is forecasted to reach \$0 million in 2025.)

(21) Physical game distribution requires manufacturing infrastructure and a viable supply chain, as it involves producing copies of the game in physical media that the user can purchase through a retail outlet and use directly with a device.³⁴ Digital distribution is comparatively simple: the game is downloaded to a device via an online gaming platform and no physical version exists.³⁵ This difference has important marketing and financial implications. For example, when Valve was modeling the distribution of its digital content through Steam, it modelled digital distribution having high margins and “very few fixed costs[.]”³⁶ In a 2003 email, Valve’s then Chief Financial Officer and Treasurer, Pat Goodwin, remarked that Valve’s margin on a physical game is [REDACTED] compared to a [REDACTED] margin on the Steam version.³⁷ He said: “Steam derives profit [REDACTED] [REDACTED] [REDACTED]”³⁸

(22) According to Mr. Lynch, physical distribution is also more costly and complicated than digital.³⁹ For example, physical distributors have to “put the game on a piece of plastic, CD-ROM, DVD, and then [they’ve] got to put it in a box and make it in a factory. And then [they] have to ship those boxes to all over the world. Eventually they have to get onto store shelves. Then [they] have to kind of make sure those store shelves are kind of organized and they’re doing a good job in terms of presentation. [They] have to worry about the inventory kind of

Screen Rant, “You’re Not Buying Video Games, You’re Buying IOUs,” 11/13/2022, <https://screenrant.com/video-game-physical-disc-validation-key-digital-download/>. (“For PC gaming fans, the switch to digital purchases is more universal, as storefronts like Steam have almost entirely replaced physical PC disc sales.”)

³⁴ Gameopedia, “The Decline of Physical Games and the Rise of Digital Distribution,” 9/26/2022, <https://www.gameopedia.com/decline-of-physical-games/>. (“A physical game copy refers to any game whose data is stored in physical media like cartridges, floppy discs, CDs, DVDs or Blu-ray discs.”)

³⁵ Gameopedia, “The Decline of Physical Games and the Rise of Digital Distribution,” 9/26/2022, <https://www.gameopedia.com/decline-of-physical-games/>. (“A digital game refers to any title downloaded from a digital delivery service such as Steam, a console manufacturer’s online store, or smartphone app stores. Digital game data can be installed on devices like internal hard disks, solid-state drives and even removable storage.”)

³⁶ Valve, Emails Regarding Valve’s Financial Model, 12/9/2003–12/10/2003 (VALVE_ANT_0050975–76, at VALVE_ANT_0050975), available at Scott Lynch, Dep. Tr., 10/12/2023, Exhibit 132.

³⁷ Valve, Emails Regarding Retail and Steam Mark-Ups, 10/24/2003 (VALVE_ANT_0051858). (“Our margin on a retail box is [REDACTED]. This compares to the Steam version at [REDACTED]. Steam derives profit [REDACTED]”)

³⁸ Valve, Emails Regarding Retail and Steam Mark-Ups, 10/24/2003 (VALVE_ANT_0051858).

LinkedIn, Pat Goodwin, <https://www.linkedin.com/in/patrickgoodwinco> (accessed 11/12/2023).

³⁹ Scott Lynch, Dep. Tr., 10/12/2023, at 8:9–10, 35:15–37:1, 38:9–18.

being there in all the different stores when people go there and being out of inventory.”⁴⁰ Publishers also perceive the two distribution modes as different, because for digital distribution, they just “put [their] games up online[,]” but they go through a different process for physical distribution.⁴¹

3.2.3. PC game developers and publishers⁴²

- (23) PC video games that can be downloaded or played online are created by game developers.⁴³ Game developers are responsible for “designing, creating, and bringing video games to life.”⁴⁴ According to Game Developers Conference’s (“GDC’s”) 2023 survey, 65% of video game developers develop PC games.⁴⁵
- (24) There are three common types of developers: indie, large-scale, and third-party.⁴⁶ Indie developers usually consist of teams of 1–100 individuals that work on smaller games, with a single or limited portfolio of games.⁴⁷ Large-scale developers, sometimes referred to as AAA or Triple-A,⁴⁸ consist of teams of hundreds of individuals that work on different games for multiple platforms; examples of such Triple-A developers include Riot Games (“Riot”), Epic Games (“Epic”), and Activision Blizzard.⁴⁹ Third-party developers are contracted by video game

⁴⁰ Scott Lynch, Dep. Tr., 10/12/2023, at 8:9–10, 35:15–37:1.

⁴¹ Scott Lynch, Dep. Tr., 10/12/2023, 37:20–38:3. (“Q. It’s also different -- retail and online distribution are also different from the developer’s perspective; right? A. Yeah. Yeah. I mean, it’s a different process to, you know, put your game up online versus, you know, going through the process of, you know, retail distribution, yeah.”)

⁴² As will be discussed in this section, the game “developer” and game “publisher” serve different functions, whether those functions are accomplished by a single entity or multiple ones, that is sometimes a single company undertakes both functions. In this report, the terms are used interchangeably (unless otherwise noted) to describe the entity that is actually paying the Steam commissions to Valve and are part of the putative class.

⁴³ Juego Studio, “Difference Between Mobile and PC Game Development,” 9/5/2022, <https://www.juegostudio.com/blog/difference-between-mobile-and-pc-game-development>.

⁴⁴ Polydin Studio, Unveiling the Roles of Game Developers and Publishers, <https://polydin.com/game-developers-and-publishers/> (accessed 10/18/2023).

⁴⁵ GDC, “State of the Game Industry 2023,” 3/20/2023–3/24/2023, at 5.

⁴⁶ HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

⁴⁷ HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

⁴⁸ Valve, Emails Regarding Competitor Analysis, 1/31/2020–2/13/2020 (VALVE_ANT_0167817–20, at VALVE_ANT_0167817).
Valve, Email Regarding Competitor Analysis, 2/19/2021 (VALVE_ANT_0061386–89, at VALVE_ANT_0061388).

⁴⁹ HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

publishers to develop games, as publishers may conceive of games “but have priorities elsewhere.”⁵⁰ In such an arrangement, the publisher “determines the game’s goals, and creative control is never fully given to the developer.”⁵¹

- (25) Game publishers are the entities that actually bring games to the market for users to play.⁵² Game publishers include Valve, Activision Blizzard, Electronic Arts (“EA”), and Ubisoft, all of which also operate digital platforms and develop games.⁵³ Some game developers do not have the resources to also publish games, as that requires the ability “to produce, deliver, and support a game all on their own servers.”⁵⁴ Testimony from Dark Catt employee⁵⁵ Jason Owens also indicates that financial constraints may prevent small developers from publishing their own games.⁵⁶
- (26) Game publishers support game developers by providing funding that allows game developers to create the games. Publishers may also generate funding for developers by distributing developed games on platforms like Steam and Epic Games Store (“EGS”).⁵⁷ Publishers also assist in monetization of games through downloadable content and in-game advertising.⁵⁸ The relationship between developer and publisher is symbiotic. A game developer benefits from a game publisher’s “financial support, marketing expertise, and distribution channels[,]” while the publisher relies on the developer’s creativity and technical expertise to create “compelling

⁵⁰ HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

⁵¹ HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

⁵² HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

⁵³ HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

⁵⁴ HP, “Game Developers vs Game Publishers: What’s the Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>.

⁵⁵ Jason Owens, Dep. Tr., 12/5/2023, at 16:20–21. (“Q. And then where did you work after 2014? A. For Dark Catt Studios.”) LinkedIn, Jason Owens, <https://www.linkedin.com/in/jason-owens-6914a8153> (accessed 12/15/2023).

⁵⁶ Jason Owens, Dep. Tr., 12/5/2023, at 95:18–96:2. (“Q. You know, since we’re just – did Dark Catt ever consider working with a publisher? A. Yes. Q. Why? A. Well, we’re a small company. Publishing is difficult -- Q. Sorry. Go ahead. A. -- expensive.” Q. Needed money? A. Yes.)

⁵⁷ Polydin Studio, Unveiling the Roles of Game Developers and Publishers, <https://polydin.com/game-developers-and-publishers/> (accessed 10/18/2023).

⁵⁸ Polydin Studio, Unveiling the Roles of Game Developers and Publishers, <https://polydin.com/game-developers-and-publishers/> (accessed 10/18/2023).

and marketable games.”⁵⁹ Sometimes, a single company undertakes both the game publisher and developer roles.⁶⁰ A publisher can create an in-house development team to develop games,⁶¹ as in the case of Annapurna Interactive, a game publisher that created an internal development studio in 2022 to develop games.⁶²

- (27) Publishers may also distribute games through their own proprietary website. One prominent example of a publisher/developer that sells games directly to consumers via its own website is Blizzard, who merged with Activision in 2008 to create Activision Blizzard.⁶³ Blizzard developed popular titles such as *World of Warcraft*, *Overwatch*, *Diablo*, and *StarCraft*.⁶⁴ The company has historically offered its PC games exclusively through its *Battle.net* platform (although the company recently announced that, as of August 10, 2023, the company would distribute on Steam for the first time).⁶⁵ Some developers distribute their games both through their own platforms and non-proprietary platforms like Steam. For example, CD Projekt, makers of *The Witcher* series and *Cyberpunk 2077*, offer games both through their own GOG platform⁶⁶ and through Steam.⁶⁷

⁵⁹ Polydin Studio, Unveiling the Roles of Game Developers and Publishers, <https://polydin.com/game-developers-and-publishers/> (accessed 10/18/2023).

⁶⁰ Consolidated Second Amended Class Action Complaint, 3/23/2023, ¶ 3. (“In the PC gaming industry, the ‘developer’ is typically the entity that creates the game while the entity that markets the game is typically referred to as the game ‘publisher.’ Sometimes a single company undertakes both of these functions.”)

⁶¹ HP, “Game Developers vs Game Publishers: What’s The Difference?,” 7/19/2020, <https://www.hp.com/us-en/shop/tech-takes/game-developers-vs-game-publishers>. (“Some of the larger gaming publishers crossover as developers. These publishers can either field in-house teams or contract out a new game to an independent developer.”)

⁶² Game Developer, “Annapurna Interactive Now has an Internal Development Studio,” 6/6/2022, <https://www.gamedeveloper.com/business/annapurna-interactive-now-has-an-internal-development-studio>.

⁶³ Blizzard Battle.net Website, How to Download a Blizzard Game, <https://us.battle.net/support/en/article/15893> (accessed 8/30/2023).

Activision Blizzard Press Release, “Vivendi and Activision Complete Transaction to create Activision Blizzard,” 7/10/2008, <https://investor.activision.com/news-releases/news-release-details/vivendi-and-activision-complete-transaction-create-activision>.

⁶⁴ Blizzard Website, All Games, <https://www.blizzard.com/en-us/games> (accessed 8/30/2023).

⁶⁵ Keen Gamer, “Blizzard PC Games Coming to Steam, Overwatch 2 Revealed to Release First,” 7/21/2023, <https://www.keengamer.com/articles/news/blizzard-pc-games-coming-to-steam-overwatch-2-revealed-to-release-first/>.

⁶⁶ The Verge, “GOG is Losing Money and Refocusing on ‘Handpicked Selection of Games’,” 11/29/2021, <https://www.theverge.com/2021/11/29/22808199/cd-projekt-gog-losses-restructuring-earnings-2021>.

⁶⁷ See, for example:

Steam, *The Witcher 3 Wild Hunt*, https://store.steampowered.com/app/292030/The_Witcher_3_Wild_Hunt/ (accessed 8/30/2023).

- (28) GDC conducts an annual survey of developers regarding the type of platforms (*e.g.*, PC, PlayStation, Xbox) for which they make games.⁶⁸ The PC platform has been the “focus for over half of dev[eloper]s for years[.]”⁶⁹ Since 2017, an increasing majority of developers surveyed reported developing games for PC, rising from 53% in 2017 to 66% in 2024.⁷⁰ As GDC noted in its 2024 report, PC game development remains the “dominant platform” and “the main platform of choice for [developers].”⁷¹

3.3. Valve’s Steam platform

3.3.1. Overview

- (29) Steam is a platform and application developed by Valve for distributing video games online.⁷² After creating a Steam account (for free), users can purchase games, add-ons, and expansion

⁶⁸ See, for example:

GDC, “State of the Game Industry 2017,” 2/27/2017–3/3/2017, at 3–12.

GDC, “State of the Game Industry 2024,” 2023, at 3–26.

⁶⁹ PC Gamer, “PC is the Most ‘Dominant’ it’s Been this Decade as Two-Thirds of Devs Say They’re Targeting the Platform,” 1/19/2024, <https://www.pcgamer.com/pc-is-the-most-dominant-its-been-this-decade-as-two-thirds-of-devs-say-theyre-targeting-the-platform/>.

⁷⁰ GDC, “State of the Game Industry 2017,” 2/27/2017–3/3/2017, at 3.

GDC, “State of the Game Industry 2018,” 3/19/2018–3/23/2018, at 3.

GDC, “State of the Game Industry 2019,” 3/18/2019–3/22/2019, at 12.

GDC, “State of the Game Industry 2020,” 2020, at 3.

GDC, “State of the Game Industry 2021,” 7/19/2021–7/23/2021, at 4.

GDC, “State of the Game Industry 2022,” 3/21/2022–3/25/2022, at 2.

GDC, “State of the Game Industry 2023,” 3/20/2023–3/24/2023, at 5.

GDC, “State of the Game Industry 2024,” 2023, at 5–6.

⁷¹ GDC, “State of the Game Industry 2024,” 2023, at 5–6.

⁷² Android Authority, “What is Steam: The Popular Gaming Platform Explained,” 10/17/2023, <https://www.androidauthority.com/what-is-steam-3254981/>.

Steam also offers a mobile app, Steam Mobile, that users can access the social features of Steam and buy games. Game play is not a feature of Steam Mobile and is described as an app used to “[b]uy games, protect your Steam account, and get the latest news from your games and the community.” See:

Android Authority, “What is Steam: The Popular Gaming Platform Explained,” 10/17/2023, <https://www.androidauthority.com/what-is-steam-3254981/>.

Steam Store, The Ultimate Online Gaming Platform, <https://store.steampowered.com/mobile> (accessed 10/17/2023).

See also: Apple App Store, Steam Mobile, <https://apps.apple.com/us/app/steam-mobile/id495369748> (accessed 10/17/2023).

packs on the Steam Store that are then stored in their Steam Library.⁷³ Steam also offers social features that allow users to interact with other players, view user-created content, and live-stream playing sessions.⁷⁴

- (30) Steam is a platform. Economists define a platform as an entity that facilitates interaction between one or more groups of users, like consumers and producers.⁷⁵ Here, Steam connects game publishers/developers to game players, facilitating transactions between the two. Digital platforms, like Steam, take the form of “website[s], app[s] or other digital venue[s] that interact commercially with one or more group of users.”⁷⁶ While platforms that connect groups of users directly to people like them are called “one-sided” or “single-sided” platforms, platforms such as Steam, that connect two or more different groups of users in a physical or virtual space are called two-sided or multi-sided platforms.⁷⁷ Platforms often exhibit network effects. Economists define network effects as an attribute of a product or platform, in which the product or platform’s value changes as the number of users of that product or platform changes.⁷⁸ “Direct” or “same-side” network effects exist if, as more users join a platform, the

Steam also offers the Steam Link app that is available for major devices including phones (e.g., iPhones, Android), PCs (e.g., Windows, Mac, Linux), and other devices (e.g., smart TVs, tablets, Raspberry Pi). Users can remote play games by connecting, or linking, these devices through the Steam Link app to a PC that is running Steam. While this allows mobile (or other device) game play, it must still be linked, and powered through, a user’s PC running Steam. See:

Steam Store, Steam Link, https://store.steampowered.com/app/353380/Steam_Link/ (accessed 10/17/2023).

Steam Store, Remote Play, <https://store.steampowered.com/remoteplay#anywhere> (accessed 10/17/2023).

⁷³ Android Authority, “What is Steam: The Popular Gaming Platform Explained,” 4/20/2023, <https://www.androidauthority.com/what-is-steam-3254981/>.

⁷⁴ Android Authority, “What is Steam: The Popular Gaming Platform Explained,” 4/20/2023, <https://www.androidauthority.com/what-is-steam-3254981/>.

⁷⁵ Parker, Geoffrey G., Marshall W. Van Alstyne, and Sangeet Paul Choudary (2016), *Platform Revolution*, New York, NY: W. W. Norton & Company, at 5. (“A platform is a business based on enabling value-creating interactions between external producers and consumers.”)

Hovenkamp, Herbert J. (2020), “Antitrust and Platform Monopoly,” *Yale Law Journal* 130: 1952–2273, at 1957.

⁷⁶ Hovenkamp, Herbert J. (2020), “Antitrust and Platform Monopoly,” *Yale Law Journal* 130: 1952–2273, at 1957.

⁷⁷ Platform Chronicles, “What Are Platform Businesses?” 1/26/2021, <https://platformchronicles.substack.com/p/what-are-platform-businesses>. (“Platforms can be one-sided, i.e. have one type of customer. . .”)

Evans, David S. and Richard Schmalensee (2016), *Matchmakers: The New Economics of Multisided Platforms*, Boston, MA: Harvard Business Review Press, at 210. (“Multisided platform: A business that operates a physical or virtual place (a platform) to help two or more different groups find each other and interact. The different groups are called ‘sides’ of the platform.”)

⁷⁸ Shapiro, Carl and Hal R. Varian (1998), *Information Rules: A Strategic Guide to the Network Economy*, Brighton, MA: Harvard Business Review Press, at 13. (“When the value of a product to one user depends on how many other users there are, economists say that this product exhibits *network externalities*, or *network effects*. . . . Technologies subject to strong network effects tend to exhibit long lead times followed by explosive growth. The pattern results from *positive feedback*: as the installed base of users grows, more and more users find adoption worthwhile.”)

value of that platform increases to all users on that same side of the platform.⁷⁹ “Indirect” or “cross-side” network effects exist if, as more users of a *different* group join a platform, the value of the platform increases to the first group of users.⁸⁰

- (31) In 2000, Valve was “primarily a video game developer[.]”⁸¹ In 2002, Valve had an average of 3.4 billion player minutes per month and had published two successful computer games: *Half-Life* and *Counter-Strike*.⁸² Before Valve transitioned to distribution of first-party games on Steam in 2003, *Half-Life* and *Counter-Strike* were published by Sierra’s World Opponent Network (“WON”), which Valve acquired in 2001.⁸³ Valve’s development of Steam was prompted both by a need to streamline its game update system, as well as to provide “anti-cheat protection” in games.⁸⁴ Following Valve’s release of *Counter-Strike* in 2000, the company

⁷⁹ Farrell, Joseph, and Paul Klemperer (2007), “Coordination and Lock-in: Competition with Switching Costs and Network Effects,” in M. Armstrong and R. Porter eds., *Handbook of Industrial Organization, Volume 3*, Elsevier B.V, at 1974. (“A good exhibits direct network effects if adoption by different users is complementary, so that each user’s adoption payoff, and his incentive to adopt, increases as more others adopt. Thus users of a communications network or speakers of a language gain directly when others adopt it, because they have more opportunities for (beneficial) interactions with peers.”)

⁸⁰ Parker, Geoffrey G., Marshall W. Van Alstyne, and Sangeet Paul Choudary (2016), *Platform Revolution*, New York, NY: W. W. Norton & Company, at 29. (“... cross-side effects are network effects created by the impact of users from one side of the market on users from the other side of the market.”)

A canonical example is the Yellow Pages directory, which exhibits network effects as its value depends on the number of consumers using it. Consumers value the Yellow Pages more highly when they contain greater amounts of information and advertising, while retailers increase advertising in the Yellow Pages when there are greater numbers of consumers. See:

Rysman, Marc (2002), “Competition Between Networks: A Study of the Market for Yellow Pages,” *Boston University Industry Studies Project Working Paper*, 1–43, at 1–2.

⁸¹ Scott Lynch, Dep. Tr., 10/12/2023, at 17:17–19, 22:25–23:2. (“Q. When you began at Valve, Valve was primarily a video game developer; is that fair? A. Yeah.”)

⁸² Valve, “Valve Unveils Steam at 2002 Game Developer’s Conference,” 3/21/2022 (VALVE_ANT_0046416–18, at VALVE_ANT_0046416–18).

⁸³ Scott Lynch, Dep. Tr., 10/12/2023, at 15:11–12, 18:6–11, 29:18–25, 32:5–7. (“Q. So in ‘94 or ‘95, you began at Sierra On-Line? A. Yeah.” “Q. How did you come to work for Valve? A. Well, I had met Gabe in probably ‘96, ‘97 at Sierra and did -- we did a publishing deal together for Half-Life. So we were the publisher of Half-Life. Worked with Valve as they were building Half-Life. Launched Half-Life in probably November of ‘98.”)

PC Gamer, “A Brief History of Online Gaming on the PC,” 2/22/2017, <https://www.pcgamer.com/a-brief-history-of-online-gaming-on-the-pc/>.

Valve, Emails Regarding Game Licensing, 10/23/2003–10/28/2003 (VALVE_ANT_0046299–301, at VALVE_ANT_0046299).

⁸⁴ LinkedIn, “The Rise of Steam: A Case Study on the Most Dominant Force in Gaming,” 11/11/2021, <https://www.linkedin.com/pulse/rise-steam-case-study-most-dominant-force-gaming-ryan-yuen/>.

Kotaku, “Steam is 10 Today. Remember When it Sucked?,” 9/12/2013, <https://kotaku.com/steam-is-10-today-remember-when-it-sucked-1297594444>.

struggled to curb rampant cheating and to consistently deliver game updates.⁸⁵ To update the game, Valve had to shut down its online services for multiple days at a time, and users were responsible for searching the internet to find the most recent update.⁸⁶ According to Scott Lynch, in 2003, Valve would distribute patches and updates for its games through “a number of places” and “people would put it up on their download sites and people would download it.”⁸⁷ After polling its user base and finding that over 75% of their users had broadband connections, Valve announced the development of Steam to be a new online content delivery system.⁸⁸

- (32) Valve officially launched Steam on September 12, 2003.⁸⁹ Based on an internal Valve document from October 2003, after its launch, Valve used Steam to automatically update its games such as *Half-Life*, *Counter-Strike*, and *Day of Defeat*.⁹⁰ Scott Lynch testified that Valve started distributing its games through Steam because there were “a bunch of benefits” to Valve and its customers.⁹¹ Internal Valve communications from December 2003 state that Steam had “tremendous upside potential” and show that Valve employees recognized “the magnitude of the opportunity if [Valve could] get even modest numbers of players to purchase

⁸⁵ LinkedIn, “The Rise of Steam: A Case Study on the Most Dominant Force in Gaming,” 11/11/2021, <https://www.linkedin.com/pulse/rise-steam-case-study-most-dominant-force-gaming-ryan-yuen/>.

Kotaku, “Steam is 10 Today. Remember When it Sucked?,” 9/12/2013, <https://kotaku.com/steam-is-10-today-remember-when-it-sucked-1297594444>.

⁸⁶ LinkedIn, “The Rise of Steam: A Case Study on the Most Dominant Force in Gaming,” 11/11/2021, <https://www.linkedin.com/pulse/rise-steam-case-study-most-dominant-force-gaming-ryan-yuen/>.

⁸⁷ Scott Lynch, Dep. Tr., 10/12/2023, at 32:14–33:12.

⁸⁸ ExtremeTech, “Valve Changes Online Gaming Rules,” 3/22/2002, <https://www.extremetech.com/computing/50650-valve-changes-online-gaming-rules>.

Gameopedia, “The Decline of Physical Games and the Rise of Digital Distribution,” 9/26/2022, <https://www.gameopedia.com/decline-of-physical-games/>.

LinkedIn, “The Rise of Steam: A Case Study on the Most Dominant Force in Gaming,” 11/11/2021, <https://www.linkedin.com/pulse/rise-steam-case-study-most-dominant-force-gaming-ryan-yuen/>.

⁸⁹ Kotaku, “Steam is 10 Today. Remember When it Sucked?,” 9/12/2013, <https://kotaku.com/steam-is-10-today-remember-when-it-sucked-1297594444>.

See also: Scott Lynch, Dep. Tr., 10/12/2023, at 31:11–13. (“Q. Okay. Steam was released in September of 2003; right? A. Yep.”)

⁹⁰ Valve, Emails Regarding Game Licensing, 10/23/2003–10/28/2003 (VALVE_ANT_0046299–301, at VALVE_ANT_0046299).

⁹¹ Scott Lynch, Dep. Tr., 10/12/2023, at 38:24–39:13. (“Q. But Valve ultimately did start distributing its first-party games online; right? A. Yeah. We did do online distribution and retail. Q. And you started online distribution because you thought it had some benefit to Valve to do so; right? A. We thought -- we thought online distribution would have benefits to Valve and to customers. That’s why we started -- you know, we started down that path pretty -- pretty early in the internet. So you had to hope a lot of things would get better. But, yeah, that -- you know, the original theory was we thought there was a bunch of benefits to online distribution. That’s why we started doing it.”)

products via Steam.”⁹² Valve continued using both Steam and WON until it announced in 2004 that it would be shutting down WON servers in July of that year.⁹³

- (33) The popularity of Valve’s *Half-Life 2* jumpstarted Steam’s online digital distribution platform growth. Millions of *Half-Life 2* purchasers were required to become Steam users in order to play the game. When Valve released *Half-Life 2* in 2004, it offered both physical distribution through brick-and-mortar outlets and digital distribution through Steam.⁹⁴ However, Valve required all users—even those who purchased physical copies of the game at brick-and-mortar retailers—to create a Steam account to play the game.⁹⁵ In a 2003 email correspondence, Valve stated that its plan was “to go into production with Steam on or around Monday[,] August 18th, to our customer base of around 2-3 million people. We’ll be forcing all of our existing customers to create accounts on our system (i.e. in Berkeley DB) and forcing them to authenticate via Steam to play our games (which they have already paid for). We have players all around the world, so the system needs to run 24/7 from the start.”⁹⁶ *Half-Life 2* sold over 4 million copies in its first two years.⁹⁷
- (34) In 2005, Valve expanded its digital distribution platform by reaching agreements with external publishers.⁹⁸ Within two years, Valve had secured deals with major publishers to distribute

⁹² Valve, Emails Regarding Valve’s Financial Model, 12/9/2003–12/10/2003 (VALVE_ANT_0050975–76, at VALVE_ANT_0050975), available at Scott Lynch, Dep. Tr., 10/12/2023, Exhibit 132.

⁹³ Valve, Emails Regarding WON and Steam, 12/19/2003–12/20/2003 (VALVE_ANT_0046639–40, at VALVE_ANT_0046639).
Valve, Email Regarding WON Servers, 7/15/2004 (VALVE_ANT_0293433).

⁹⁴ LinkedIn, “The Rise of Steam: A Case Study on the Most Dominant Force in Gaming,” 11/11/2021, <https://www.linkedin.com/pulse/rise-steam-case-study-most-dominant-force-gaming-ryan-yuen/>.

Kotaku, “Steam is 10 Today. Remember When it Sucked?,” 9/12/2013, <https://kotaku.com/steam-is-10-today-remember-when-it-sucked-1297594444>.

⁹⁵ LinkedIn, “The Rise of Steam: A Case Study on the Most Dominant Force in Gaming,” 11/11/2021, <https://www.linkedin.com/pulse/rise-steam-case-study-most-dominant-force-gaming-ryan-yuen/>.

Kotaku, “Steam is 10 Today. Remember When it Sucked?,” 9/12/2013, <https://kotaku.com/steam-is-10-today-remember-when-it-sucked-1297594444>.

⁹⁶ Valve, Emails Regarding Product Launch Schedule, 8/5/2003–8/13/2003 (VALVE_ANT_0407102–106, at VALVE_ANT_0407105).

⁹⁷ LinkedIn, “The Rise of Steam: A Case Study on the Most Dominant Force in Gaming,” 11/11/2021, <https://www.linkedin.com/pulse/rise-steam-case-study-most-dominant-force-gaming-ryan-yuen/>.

⁹⁸ Kotaku, “Steam is 10 Today. Remember When it Sucked?,” 9/12/2013, <https://kotaku.com/steam-is-10-today-remember-when-it-sucked-1297594444>.

See also: Scott Lynch, Dep. Tr., 10/12/2023, at 29:12–16. (“Q. When did Valve decide to distribute games for third parties? A. When did we decide? We decided, I think, when we did our first third-party game deal, which I think was in 2005.”)

games, including id Software, Activision, Eidos, and Capcom.⁹⁹ A 2008 PC Gaming Alliance report noted that “[d]igital distribution is the replacement of traditional disc-based media,” as “publishers look for ways to boost their profit, cutting out expensive box retail SKUs[.]”¹⁰⁰ In 2008, Steam had 15 million users and supported “over 250 game titles[.]”¹⁰¹ In that same year, most major publishers were distributing PC games on Steam, including Epic, Atari, Activision, Eidos, 2K, Ubisoft, Sega, THQ, Bethesda, and EA.¹⁰² By 2009, 48% of all unit sales of PC games were downloaded online.¹⁰³ Online sales of PC games exceeded physical sales by three million for the first six months of 2010.¹⁰⁴ By 2013, digital sales “represent[ed] a whopping 92 percent of all PC game sales across the world[.]”¹⁰⁵ In the years following, sales of physical games continued to decline, largely because of the increasing availability of faster internet connections.¹⁰⁶

- (35) Steam’s catalogue has grown significantly over time. According to the transaction data Valve provided in this matter, the number of new games released on Steam has grown considerably from 2005 through 2022.¹⁰⁷ As of February 2024, Steam has approximately 90,000 titles on the platform.¹⁰⁸ The estimated number of new users on Steam has grown from 820,000 in

⁹⁹ Kotaku, “Steam is 10 Today. Remember When it Sucked?,” 9/12/2013, <https://kotaku.com/steam-is-10-today-remember-when-it-sucked-1297594444>.

¹⁰⁰ PC Gaming Alliance, “The PCGA Presents: The PC Gaming Industry in 2008,” c. 2009, at 10.

¹⁰¹ PC Gaming Alliance, “The PCGA Presents: The PC Gaming Industry in 2008,” c. 2009, at 10.

¹⁰² Valve, Transaction Data (“Valve Transaction Data”), 1/1/2008–12/31/2008. (VALVE_ANT_0753183–3573, VALVE_ANT_1589681–88, VALVE_ANT_2579263–68). See “07_Publishers_in_2008.R.”

¹⁰³ CNBC, “Digital Downloads Encroach on Brick and Mortar Territory,” 7/22/2010, <https://www.cnbc.com/2010/07/22/digital-downloads-encroach-on-brick-and-mortar-territory.html>.

Softpedia News, “PC Digital Game Sales on Par with Brick and Mortar Retailers in 2009,” 7/21/2010, <https://news.softpedia.com/news/PC-Digital-Game-Sales-On-Par-With-Brick-and-Mortar-Retailers-in-2009-148553.shtml>.

¹⁰⁴ Forbes, “Digital vs. Physical: PC Game Downloads Surpass Retail Unit Sales By 3M, Says Survey,” 9/20/2010, <https://www.forbes.com/sites/oliverchiang/2010/09/20/digital-vs-physical-pc-game-downloads-surpass-retail-unit-sales-by-3m-says-survey/?sh=5d5f606e2b60>.

¹⁰⁵ PC Retail Website, Digital Downloads Account for 92% of PC Game Sales, accessed via Internet Archive (as displayed on 8/20/2014), <https://web.archive.org/web/20140820180620/https://pcr-online.biz/news/read/digital-sales-make-up-92-of-global-game-revenues/034551> (accessed 12/8/2023).

¹⁰⁶ Gameopedia, “The Decline of Physical Games and the Rise of Digital Distribution,” 9/26/2022, <https://www.gameopedia.com/decline-of-physical-games/>.

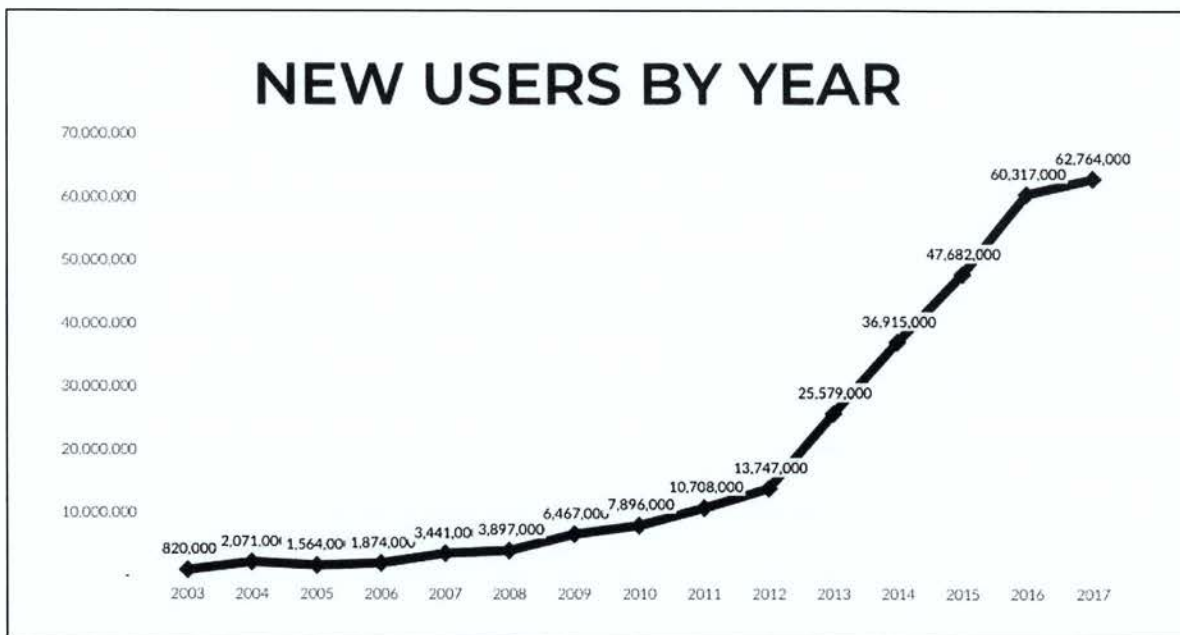
¹⁰⁷ See Attachment G-2.

¹⁰⁸ Steam Website, Titles on Steam, <https://store.steampowered.com/search/?category1=998&os=win%2Cmac%2Clinux&supportedlang=20nglish&ndl=1> (accessed 2/1/2024).

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2003 to over 60 million by 2017.¹⁰⁹ See Figure 1. A 2020 joint ██████████ presentation reports that Steam had an estimated ██████████ registered accounts.¹¹⁰ Similarly, third-party content sales on Steam grew considerably from ██████████ between 2005 and 2021.¹¹¹

Figure 1: Steam New Users Per Year, 2003-2017¹¹²



- (36) Valve is a U.S.-based corporation,¹¹³ but it operates Steam across the world.¹¹⁴ As of June 2022, 39% of Steam publishers' lifetime revenues came from the United States, followed by Japan (18%), the United Kingdom (11%), and France (7%).¹¹⁵ Only 24% of Steam publishers

¹⁰⁹ Galyonkin, "Steam in 2017," 4/4/2018, <https://galyonk.in/steam-in-2017-129c0e6be260>.

¹¹⁰ Valve, "Joint Business Review," 10/2020 (VALVE_ANT_0052792– 829, at VALVE_ANT_0052816).

¹¹¹ See Attachment D-3.

¹¹² Galyonkin, "Steam in 2017," 4/4/2018, <https://galyonk.in/steam-in-2017-129c0e6be260>.

¹¹³ Valve Website, Press Inquiries, <https://www.valvesoftware.com/en/press/inquiries> (accessed 1/5/2024). ("Valve is an entertainment software and technology company founded in 1996 and based in Bellevue, Washington.")

¹¹⁴ According to Steam's website, "in most cases, there are no region restrictions on products purchased directly from the Steam store." See:

Steam Website, Steam Support, <https://help.steampowered.com/en/faqs/view/58D3-B80D-2943-3CC6> (accessed 2/5/2024).

¹¹⁵ Video Game Insights, "Steam Publishers Landscape – Concentration and Dominance of the US," 6/13/2022, <https://vginsights.com/insights/article/steam-publishers-landscape-concentration-and-dominance-of-the-us>.

were from the United States as of June 2022.¹¹⁶ Games are written in multiple languages for Steam,¹¹⁷ and Steam’s global traffic map shows purchase and gameplay activity worldwide.¹¹⁸ As of 2021, Steam had approximately 132 million active players, with approximately 69 million daily active players.¹¹⁹

3.3.2. Steam Wallet

- (37) Steam Wallet is a digital wallet that Valve released in 2010.¹²⁰ Users can add funds to their wallets (using credit cards) in five different amounts: \$5, \$10, \$25, \$50, \$100.¹²¹ Users can also add funds to their wallets through Steam Wallet Codes; according to Steam, “you can find physical Steam Wallet cards that contain codes which can be redeemed into your Steam account at many electronics retailers, convenience stores, game stores and grocery stores. You can also purchase Steam Wallet codes printed directly on a receipt or delivered via SMS/text message or email through various kiosks, cyber cafes and eCommerce websites. Codes are also available directly from PayPal.”¹²² With their Wallet funds, users can buy “games, software and any other item you can purchase on Steam.”¹²³ However, Steam Wallet funds cannot be gifted, “withdrawn to a bank account[,]” or transferred to another Steam

¹¹⁶ Video Game Insights, “Steam Publishers Landscape – Concentration and Dominance of the US,” 6/13/2022, <https://vginsights.com/insights/article/steam-publishers-landscape-concentration-and-dominance-of-the-us>.

¹¹⁷ Valve, “Steam Platform Update 2023,” c. 2023 (VALVE_ANT_2925532.pptx, at slide 11).

See also: DemandSage, “Steam Statistics For 2024 (Users, Popular Games & Market),” 12/27/2023, <https://www.demandsage.com/steam-statistics/>.

¹¹⁸ Steam Store, Steam Download Stats, <https://store.steampowered.com/stats/content/> (accessed 10/18/2023).

World Population Review, Steam Users by Country 2023, <https://worldpopulationreview.com/country-rankings/steam-users-by-country> (accessed 10/18/2023).

¹¹⁹ Steam Website, “Steam – 2021 Year in Review,” 3/8/2022, <https://store.steampowered.com/news/group/4145017/view/3133946090937137590>.

¹²⁰ Steam, “Steam Wallet and In-Game Transactions are Here,” 9/30/2010, <https://store.steampowered.com/oldnews/4406>.

¹²¹ Steam, Add Funds to Your Steam Wallet, <https://store.steampowered.com/steamaccount/addfunds#> (accessed 12/7/2023).

¹²² Steam, Steam Wallet, <https://help.steampowered.com/en/faqs/view/78E3-7431-1E88-AD59> (accessed 12/7/2023).

¹²³ Steam, Steam Wallet, <https://help.steampowered.com/en/faqs/view/78E3-7431-1E88-AD59> (accessed 12/7/2023).

Steam, Add Funds to Your Steam Wallet, <https://store.steampowered.com/steamaccount/addfunds#> (accessed 12/7/2023).

account.¹²⁴ While users have the option to use funds in their Steam Wallet to purchase full games, they are required to use their Steam Wallet for in-game purchases.¹²⁵

3.3.3. Marketing benefits

- (38) Valve offers publishers curated marketing opportunities on Steam, including takeovers, spotlights, and daily deals.¹²⁶ Takeover marketing has a “very high bar to qualify” and is the “highest level of featuring offered on Steam.”¹²⁷ Spotlight marketing, or spotlights, includes midweek and weekend deal promotions [that] “are featured in [Steam’s] ‘Special Offers’

¹²⁴ Steam, Steam Wallet, <https://help.steampowered.com/en/faqs/view/78E3-7431-1E88-AD59> (accessed 12/7/2023).

¹²⁵ Steam, Add Funds to Your Steam Wallet, <https://store.steampowered.com/steamaccount/addfunds#> (accessed 12/7/2023). (“Funds in your Steam Wallet may be used for the purchase of any game on Steam or within a game that supports Steam transactions.”)

Steamworks Website, Microtransactions (In-Game Purchases), <https://partner.steamgames.com/doc/features/microtransactions> (accessed 1/3/2024). (“For any in-game purchases, you’ll need to use the microtransaction API so Steam customers can only make purchases from the Steam Wallet.”)

¹²⁶ Valve, Emails Regarding GDC 2023, 4/19/2023 (VALVE_ANT_2925530–32, at PDF 38–39), available at Augusta Butlin, Dep. Tr., 10/11/2023, Exhibit 124. (“Curated promotions (Daily Deals, Midweek Madness, Weekend Deals, front page takeovers) are all driven by customer interest[.]” “Takeover, Curated [. . .] Spotlights, Curated [. . .] Daily Deals, Curated[.]”)

¹²⁷ Valve, Emails Regarding GDC 2023, 4/19/2023 (VALVE_ANT_2925530–32, at PDF 39), available at Augusta Butlin, Dep. Tr., 10/11/2023, Exhibit 124.

Takeover marketing refers to game promotion at the very top of Steam Store’s front page. See, for example:

Valve, Emails Regarding GDC 2023, 4/19/2023 (VALVE_ANT_2925530–32, at PDF 39), available at Augusta Butlin, Dep. Tr., 10/11/2023, Exhibit 124.

Augusta Butlin, Dep. Tr., 10/11/2023, at 152:17–153:16. (“Q. There are four different categories. Takeover, main capsule, spotlights, daily deals. Do you see that? A Yes. Q Describe for us what a takeover is. Takeover is a high level of marketing on Steam. And the picture of the slide, there is an image of Marvel’s Spiderman Remastered now available. . . . A takeover is a very prominent marketing spot on the front page. As you can see, it’s at the very top of the store. . . .”)

section.”¹²⁸ According to Valve, “[t]he bar for these promotions is high.”¹²⁹ Daily deals marketing is a “24-hour promotion on the front page [of Steam,]” and it has a lower bar for qualification than spotlights marketing.¹³⁰

- (39) Augusta Butlin, who is a member of Valve’s business development team, testified that “a takeover is a very prominent marketing spot on the front page. [. . .] So it’s not something that we do for every game or every promotion. So it’s kind of a rare marketing opportunity” that has a “prominent placement” at the top of Steam, and a lot of users see it.¹³¹ Ms. Butlin further testified that for spotlights marketing, “there are games that we reach out to and say, your game has a lot of customer interest” and ask for their participation; she went on to remark that “a midweek or a weekend deal are more than just being in the spotlight. So it’s part of one of the curated marketing things that happens in those two particular

¹²⁸ Valve, Emails Regarding GDC 2023, 4/19/2023 (VALVE_ANT_2925530–32, at PDF 39), available at Augusta Butlin, Dep. Tr., 10/11/2023, Exhibit 124.

Augusta Butlin, Dep. Tr., 10/11/2023, at 156:16–21. (“Q. And what is the significance of having a game in the spotlight? A. We use spotlights for midweek deals. In this slide, we had called them Midweek Madnesses, but we have updated our terminology, so midweek deals and weekend deals.”)

Spotlight marketing refers to Valve highlighting mid-week and weekend special deals/offers on the Steam Store home page under “Special Offers.” See, for example:

Valve, Emails Regarding GDC 2023, 4/19/2023 (VALVE_ANT_2925530–32, at PDF 39), available at Augusta Butlin, Dep. Tr., 10/11/2023, Exhibit 124.

Augusta Butlin, Dep. Tr., 10/11/2023, at 156:8–21. (“Q. What are spotlights? A. Spotlights are the first two square images here on the bottom of this slide [under ‘Special Offers’]. . . . We use spotlights for midweek deals. In this slide, we had called them Midweek Madnesses, but we have updated our terminology, so midweek deals and weekend deals.”)

¹²⁹ Valve, Emails Regarding GDC 2023, 4/19/2023 (VALVE_ANT_2925530–32, at PDF 39), available at Augusta Butlin, Dep. Tr., 10/11/2023, Exhibit 124.

Augusta Butlin, Dep. Tr., 10/11/2023, at 156:16–21. (“Q. And what is the significance of having a game in the spotlight? A. We use spotlights for midweek deals. In this slide, we had called them Midweek Madnesses, but we have updated our terminology, so midweek deals and weekend deals.”)

¹³⁰ Valve, Emails Regarding GDC 2023, 4/19/2023 (VALVE_ANT_2925530–32, at PDF 39), available at Augusta Butlin, Dep. Tr., 10/11/2023, Exhibit 124.

¹³¹ Augusta Butlin, Dep. Tr., 10/11/2023, at 25:14–16. (“Q. And for how long did you work with the business development team at Valve? A. I still do.”)

Augusta Butlin, Dep. Tr., 10/11/2023, at 153:9–16. (“Q. In your experience at the business development group at Valve, is a takeover important to a developer? A. A takeover is a very prominent marketing spot on the front page. As you can see, it’s at the very top of the store. So it’s not something that we do for every game or every promotion. So it’s kind of a rare marketing opportunity.”)

Augusta Butlin, Dep. Tr., 10/11/2023, at 154:4–13. (“Q. And what’s your understanding as to why developers would like to have their game featured as a takeover? A. Well, I couldn’t speculate to all the reasons, but it looks pretty cool, and it’s at the -- it’s at the top of the store, so it’s kind of a nice prominent placement. Q. A lot of eyes will see it? A. Yeah. I would say so. Being at the top of the store, sure.”)

promotions.”¹³² Additionally, Ms. Butlin testified that the daily deal marketing is “another curated promotional opportunity [for developers] to have their game be featured on Steam.”¹³³

- (40) Valve’s curated marketing opportunities are important to developers as they boost a game’s visibility on Steam and drive game revenue.¹³⁴ For example, in an email to a developer, a Valve employee states: “[T]akeovers represent what is by far the biggest marketing exposure available on Steam—each takeover generates between [REDACTED] impressions.”¹³⁵ As another example, an internal Valve presentation demonstrates that [REDACTED] 2018 free weekends resulted in [REDACTED] impressions that generated [REDACTED] in revenue.¹³⁶
- (41) Valve also offers algorithmic marketing on Steam. Algorithmic marketing offers personalized visibility to users.¹³⁷ According to Valve, Steam “automatically customizes elements of the store for every user[,]” so there is “no one algorithm.”¹³⁸ Steam’s “algorithms” respond to player preferences and interests.¹³⁹ Hence, Steam is personalized for users, letting “player

¹³² Augusta Butlin, Dep. Tr., 10/11/2023, at 156:16–157:13. (“Q. And what is the significance of having a game in the spotlight? A. We use spotlights for midweek deals. In this slide, we had called them Midweek Madnesses, but we have updated our terminology, so midweek deals and weekend deals. Q. Are these opportunities that developers request, and then the business development team either gives it to them or does not? A. There are partners who will reach out and want to coordinate a promotion and see if a midweek or a weekend deal fits their timing. Additionally, there are games that we reach out to and say, your game has a lot of customer interest. Is this something you might be interested in? Q. And do you find that developers treat an opportunity for their game to be in the spotlight as something that’s quite positive to their marketing efforts? A. A midweek or a weekend deal are more than just being in the spotlight. So it’s part of one of the curated marketing things that happens in those two particular promotions.”)

¹³³ Augusta Butlin, Dep. Tr., 10/11/2023, at 157:22–25. (“Q. And what is the significance of a daily deal to a developer? A. It’s another curated promotional opportunity to have their game be featured on Steam.”)

¹³⁴ Interview with David Rosen, 2/1/2024.

¹³⁵ Valve, Emails Regarding [REDACTED] Takeover, 10/24/2016–10/25/2016 (VALVE_ANT_0373867–871, at VALVE_ANT_0373869).

¹³⁶ Valve, “Steam Update,” c. 6/2018 (VALVE_ANT_1444189–4220, at VALVE_ANT_1444206).

¹³⁷ Steamworks, “Steam Visibility: How Games Get Surfaced to Players,” 2023, at 12, available at: https://steamcdn-a.akamaihd.net/steamcommunity/public/images/steamworks_docs/english/SteamVisibility102023.pdf.

See also: Valve, “Steam Discovery 2.0 Analysis,” c. 2017 (VALVE_ANT_0415783–86, at VALVE_ANT_0415783). (“As Steam became a more diverse worldwide platform, we knew manual curation would not meet the needs of all customers. We needed a solution that could scale with the growth of Steam, reacting to serve new and engaging content to users with unique interests. Over the past two years, Discovery 1.0 and 2.0 have made major updates to the way we highlight games for customers, providing a more personalized experience tailored to individual tastes.”)

Interview with David Rosen, 2/1/2024.

¹³⁸ Steamworks, “Steam Visibility: How Games Get Surfaced to Players,” 2023, at 31, 33, available at: https://steamcdn-a.akamaihd.net/steamcommunity/public/images/steamworks_docs/english/SteamVisibility102023.pdf.

¹³⁹ Steamworks, “Steam Visibility: How Games Get Surfaced to Players,” 2023, at 32–33, available at: https://steamcdn-a.akamaihd.net/steamcommunity/public/images/steamworks_docs/english/SteamVisibility102023.pdf.

preferences drive the visibility to make recommendations relevant.”¹⁴⁰ For example, Steam Store’s New & Trending, Top Sellers, Popular Upcoming, and Specials tabs are all driven by algorithmic visibility.¹⁴¹

3.3.4. Valve’s commission system on Steam

- (42) Game publishers are required to sign Valve’s Steam Distribution Agreement (“SDA”) and agree to pay a commission to Valve on all sales (both game and in-game) made by publishers through the Steam platform.¹⁴² Historically, Valve has charged a base commission of 30%.¹⁴³ According

¹⁴⁰ Steamworks, “Steam Visibility: How Games Get Surfaced to Players,” 2023, at 33, available at: https://steamcdn-a.akamaihd.net/steamcommunity/public/images/steamworks_docs/english/SteamVisibility102023.pdf.

¹⁴¹ Steamworks, “Steam Visibility: How Games Get Surfaced to Players,” 2023, at 23–29, available at: https://steamcdn-a.akamaihd.net/steamcommunity/public/images/steamworks_docs/english/SteamVisibility102023.pdf.

¹⁴² See, for example:

Valve, SDA Between Valve and [REDACTED], 6/13/2011 (VALVE ANT 0042484–97, at VALVE ANT 0042484, VALVE ANT 0042489).

and

Section 6.2 of the Agreement: [REDACTED]

See also the preamble and section 6.1 of Valve’s agreement with [REDACTED]: Valve, SDA Between Valve and [REDACTED], 3/1/2020 (VALVE_ANT_0020235–50, at VALVE_ANT_0020235, VALVE_ANT_0020240–41).

¹⁴³ Scott Lynch, Dep. Tr., 10/12/2023, at 89:15–90:2, 141:15–18. (“Q. Did there come a time that Valve stopped [REDACTED] and instead switched to 70/30s? A. I don’t think there was this stop. I mean, eventually, deals started being 70/30 predominantly. Q. When did that start to occur? When did they become predominantly 70/30? A. That’s going way back. It could have been 2010 maybe, sometime in that timeframe. Q. And from that point forward, the deals were predominantly 70/30? A. I think from that point going forward, a lot of deals were 70/30, yeah.”; “Q. And the predominant revenue share for Steam is 30 percent; right? A. During 2018, yeah, the majority would be 30 percent.”)

Valve initially experimented with [REDACTED] commission rates. These commission rates were set during a period when Valve exercised market power, and likely reflect Valve’s experimentation with finding the optimal monopoly price for its platform. See, for example:

Valve, SDA for [REDACTED], 7/15/2005 (VALVE ANT 0019722–731, at VALVE ANT 0019724).

Valve, SDA for [REDACTED], 10/11/2005 (VALVE ANT 0038381–392, at VALVE ANT 0038384).

Valve, SDA for [REDACTED], 10/10/2005 (VALVE ANT 0042738–749, at VALVE ANT 0042741).

Valve, SDA for [REDACTED], 11/14/2005 (VALVE ANT 0019732–744, at VALVE ANT 0019735).

Valve, SDA for [REDACTED], 12/2/2005 (VALVE ANT 0040316–329, at VALVE ANT 0040319).

to Mr. Lynch, Valve’s commission charged to the majority of publishers was 30% for sales made through the Steam Store until 2018.¹⁴⁴

- (43) Valve initially set its commission rate to be consistent with brick-and-mortar retailers.¹⁴⁵ This allowed it to generate high profits on Steam because, as I noted above, costs for digital sales are materially lower than for brick-and-mortar distribution.
- (44) In late 2018, Valve modified its commission system and implemented a tiered structure.¹⁴⁶ For the first \$10 million in total revenue for a particular game (starting from October 1, 2018), Valve charged a 30% commission.¹⁴⁷ For all game revenue greater than \$10 million and less than \$50 million, Valve’s commission dropped to 25%.¹⁴⁸ For all game revenue over \$50

¹⁴⁴ Scott Lynch, Dep. Tr., 10/12/2023, at 89:15–90:2, 141:15–18. (“Q. Did there come a time that Valve stopped [REDACTED] and instead switched to 70/30s? A. I don’t think there was this stop. I mean, eventually, deals started being 70/30 predominantly. Q. When did that start to occur? When did they become predominantly 70/30? A. That’s going way back. It could have been 2010 maybe, sometime in that timeframe. Q. And from that point forward, the deals were predominantly 70/30? A. I think from that point going forward, a lot of deals were 70/30, yeah.”; “Q. And the predominant revenue share for Steam is 30 percent; right? A. During 2018, yeah, the majority would be 30 percent.”)

The Verge, “Valve’s New Steam Revenue Agreement Gives More Money to Game Developers,” 11/30/2018, <https://www.theverge.com/2018/11/30/18120577/valve-steam-game-marketplace-revenue-split-new-rules-competition>.

¹⁴⁵ A chairman of the gaming firm Paradox Interactive argues that the 30% “fee baseline” in the video game industry takes its roots from the “economics of the home video market in the 1970s[.]” See:

Ars Technica, “Paradox Exec: Steam’s 30% Fee is ‘Outrageous,’” 7/1/2019, <https://arstechnica.com/gaming/2019/07/paradox-exec-steams-30-percent-fee-is-outrageous/>. (accessed 2/8/2024).

Valve, Emails Regarding [REDACTED] Distribution Agreement, 4/13/2007 (VALVE_ANT_2788947–953, at VALVE_ANT_2788948), available at Scott Lynch, Dep. Tr., 10/12/2023, Exhibit 133. (“70% of Steam revenues puts you in a better position unit-for-unit than you would receive selling at retail.”)

¹⁴⁶ Steam, “New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement,” 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>. (“Today, we updated the Steam Distribution Agreement with several important changes. . . . With that in mind, we’ve created new revenue share tiers for games that hit certain revenue levels. Starting from October 1, 2018 (i.e. revenues prior to that date are not included), when a game makes over \$10 million on Steam, the revenue share for that application will adjust to 75%/25% on earnings beyond \$10M. At \$50 million, the revenue share will adjust to 80%/20% on earnings beyond \$50M. Revenue includes game packages, DLC, in-game sales, and Community Marketplace game fees.”)

¹⁴⁷ Steam, “New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement,” 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

See also: Scott Lynch, Dep. Tr., 10/12/2023, at 97:13–19. (“Q. The new revenue share that Steam introduced is 70/30 unless you sell more than \$10 million of games; right? A. That is correct. Not -- no, it’s not \$10 million of games. It’s for games -- for a game that does in excess of 10 million, then the revenue share changes.”)

¹⁴⁸ Steam, “New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement,” 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

Scott Lynch, Dep. Tr., 10/12/2023, at 90:3–18. (“Q. And then in the fall of 2018, Valve introduced a new revenue sharing system? A. Yes. I think that was -- I think that was 2018. Q. And that system was for games that sold more than 10 million, they would receive a 25 percent revenue share -- A. Yes. Q. -- 75/25? A. Yes. Q. And for games that sold more than 50 million, there would be a 80/20 revenue share? A. Yeah. 80 percent to the developer, 20 percent to Valve, yes. Q. Is that still in place today? A. Yes.”)

million, Valve reduced the commission to 20%.¹⁴⁹ Game revenue includes “game packages, DLC [(downloadable content)], in-game sales and Community Marketplace game fees.”¹⁵⁰

3.3.5. Steam Keys

- (45) Valve also provides publishers with Steam Keys which are “single-use, unique, alphanumeric codes that customers can activate on Steam to add a product license to their account.”¹⁵¹ Steam Keys differ from games purchased directly on Steam, allowing publishers to sell their games “on other stores and at retail[.]”¹⁵² Valve does not take a commission on game sales made with Steam Keys.¹⁵³ When redeeming a Steam Key, users log in through their Steam account and add the game to their Steam Library, so subsequent in-game purchases are subject to Valve’s commission rate.¹⁵⁴

¹⁴⁹ Steam, “New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement,” 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>. (“Revenue includes game packages, DLC, in-game sales, and Community Marketplace game fees.”)

The Verge, “Valve’s New Steam Revenue Agreement Gives More Money to Game Developers,” 11/30/2018, <https://www.theverge.com/2018/11/30/18120577/valve-steam-game-marketplace-revenue-split-new-rules-competition>.

Scott Lynch, Dep. Tr., 10/12/2023, at 90:3–18. (“Q. And then in the fall of 2018, Valve introduced a new revenue sharing system? A. Yes. I think that was -- I think that was 2018. Q. And that system was for games that sold more than 10 million, they would receive a 25 percent revenue share -- A. Yes. Q. – 75/25? A. Yes. Q. And for games that sold more than 50 million, there would be a 80/20 revenue share? A. Yeah. 80 percent to the developer, 20 percent to Valve, yes. Q. Is that still in place today? A. Yes.”)

¹⁵⁰ Steam, “New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement,” 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

¹⁵¹ Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023).

¹⁵² Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023).

¹⁵³ Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023). (“Steam Keys are a free service we provide to developers as a convenient tool to help you sell your game on other stores and at retail, or provide for free for beta testers or press/influencers.”)

¹⁵⁴ Rebellion Website, What is a Steam Key and How Do I Download a Game?, <https://support.rebellion.com/hc/en-gb/articles/4403980176913-What-is-a-Steam-key-and-how-do-I-download-a-game-> (accessed 2/13/2023).

Valve, Emails Regarding ██████████ Distribution, 8/10/2022–9/23/2022 (VALVE_ANT_0557762–791, at VALVE_ANT_0557776). (“Valve gets no royalties and charges no fees for Steam keys, full stop--but when a customer activates a Steam key, they own the game on Steam. Which means that if they go on to make in-game transactions, they’re just playing via Steam like any other user[.]”)

- (46) Valve limits the number of Steam Keys distributed to publishers.¹⁵⁵ If a publisher requests a number of Steam Keys that Valve deems excessive, it may refuse to provide the Steam Keys to that publisher.¹⁵⁶ Valve’s policies state that “[a] request will usually be rejected if there’s an imbalance that suggests the developer is not making an offer to Steam customers that is comparable to what Steam Key purchasers are offered.”¹⁵⁷
- (47) Providing a limited number of Steam Keys to publishers helps Valve protect its current market position. Since Steam Keys can be sold outside of Steam,¹⁵⁸ they can be received by consumers who do not normally use Steam. Because Steam Keys can only be activated and used to play games on Steam,¹⁵⁹ new customers are brought into Steam. Thus, Steam Keys provide an

¹⁵⁵ Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023). (“FAQ[.] Q: How many Steam Keys can I get for my game? A: Games and applications launching on Steam may receive up to 5,000 Default Release Steam Keys to support retail activities and distribution on other stores. After that, all Steam Key requests are reviewed on a case-by-case basis. . . . Q: Why was my key request denied? A: When reviewing Steam Key requests, we typically look at the level of customer interest on Steam, the total number of keys that have been issued and activated for the game and the additional number that are being requested. A request will usually get rejected if there’s an imbalance that suggests the developer is not making an offer to Steam customers that is comparable to what Steam Key purchasers are offered.”)

¹⁵⁶ Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023). (“When reviewing Steam Key requests, some of the things we typically look at include the level of customer interest on Steam, the total number of keys that have been issued and activated for the game and the additional number that are being requested. A request will usually be rejected if there’s an imbalance that suggests the developer is not making an offer to Steam customers that is comparable to what Steam Key purchasers are offered. For instance, a game with a few hundred units of lifetime sales requesting tens of thousands of keys, or more.”)

¹⁵⁷ Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023). (“When reviewing Steam Key requests, some of the things we typically look at include the level of customer interest on Steam, the total number of keys that have been issued and activated for the game and the additional number that are being requested. A request will usually be rejected if there’s an imbalance that suggests the developer is not making an offer to Steam customers that is comparable to what Steam Key purchasers are offered. For instance, a game with a few hundred units of lifetime sales requesting tens of thousands of keys, or more.”)

¹⁵⁸ Steamworks, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023). (“Steam Keys are single-use, unique, alphanumeric codes that customers can activate on Steam to add a product license to their account. Steam Keys are a free service we provide to developers as a convenient tool to help you sell your game on other stores and at retail[.]”)

Alden Kroll, Dep. Tr., 11/16/2023, at 151:18–152:1. (“Q. I’m not sure we’ve talked about this yet, but what are Steam Keys? A. Steam Keys are codes that developers can request that they can distribute outside of Steam, whether they sell them or give them as review copies or give them as test copies, etcetera, to user – players that then activate those codes on Steam to add that game to their Steam library and download that through Steam and play it through Steam.”)

Kristian Miller, Dep. Tr., 10/3/2023, at 59:18–25. (“Q. Is one of Valve’s business objectives in distributing Steam Keys that Valve will reach customers, buyers of games, who are not on Steam? A. I can’t speak to Valve’s goal of -- at large, but it’s really a publisher ask that the publisher wants to reach customers who aren’t necessarily on Steam.”)

¹⁵⁹ Steamworks, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023). (“Steam Keys are single-use, unique, alphanumeric codes that customers can activate on Steam to add a product license to their account. Steam Keys are a free service we provide to developers as a convenient tool to help you sell your game on other stores and at retail[.]”)

opportunity for Valve to monetize game sales even when the original sale of the game occurs on other platforms or digital stores.

4. Relevant Market Definition and Monopoly Power

- (48) I understand that one of the elements that the putative class plaintiffs need to establish is that Valve has market power in the relevant market. In this section, I apply economic principles to determine the product and geographic dimensions of the relevant product market. I conclude that the relevant product market in this matter is the market for third-party digital PC game distribution via platforms and the relevant geographic market is worldwide. I then demonstrate that Valve has market power in the relevant market.

4.1. Defining the relevant market

4.1.1. Implementing the HMT/SSNIP and *Brown Shoe* factors

- (49) In economics, a market is an environment in which buyers and sellers interact for the purpose of buying and selling goods and/or services and in which the terms and conditions of trade are established, including the price at which the exchange will take place.¹⁶⁰ Firms often compete in many markets; however, which of those markets is relevant to the issues being considered and constitutes a relevant antitrust market is a subject for analysis (“relevant market”). A relevant market “is composed of products that have reasonable interchangeability for the purposes for which they are produced—price, use and qualities considered.”¹⁶¹ Put differently, a relevant market includes the set of products to which consumers can turn as reasonable economic substitutes when the relative prices of goods change.
- (50) Defining a relevant market involves analyzing two components: (a) the product dimension and (b) the geographic dimension.¹⁶² As noted herein, the product dimension includes products that are reasonable substitutes for one another within the market and are related to the plaintiffs’ claims.¹⁶³ Products are economic substitutes if an increase in the price of one

¹⁶⁰ Stigler, George J. and Robert A. Sherwin (1985), “The Extent of the Market,” *Journal of Legal Studies* 28(3): 555-585 at 555.

¹⁶¹ *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 404 (1956).

ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 225.

¹⁶² U.S. Department of Justice and Federal Trade Commission, “Merger Guidelines,” 12/18/2023, § 4.3, available at: https://www.ftc.gov/system/files/ftc_gov/pdf/P234000-NEW-MERGER-GUIDELINES.pdf.

For purposes of this report, I adopt the usual convention of referring to these as the product market and the geographic market.

¹⁶³ *FTC v. Qualcomm Inc.*, No. 5:17-cv-00220-LHK, Proposed Findings of Fact, at ¶¶ 71–72 (N.D. Cal. 2019). (“The starting place for defining a relevant market is a reference product— a product or a set of products that is offered by the firm that

product, Product B, increases quantity demanded for the other product, Product A.¹⁶⁴ The percentage change in quantity demanded of Product A for a given percentage change in the price of Product B is the cross-price elasticity of demand—a metric used to determine the level of substitutability between two products.¹⁶⁵ The relevant geographic market includes all the geographic areas to which consumers can reasonably turn for the product at issue.¹⁶⁶ While a particular good or service might be available in a wide geographic area, the geographic market that is relevant to an antitrust inquiry only encompasses the areas to which customers might reasonably turn to acquire those goods or services if prices change.

- (51) The goal of a market definition analysis is to define the set of products and geographies within which competition occurs for the products at issue.¹⁶⁷ One approach to market definition is to analyze the seven “*Brown Shoe* factors,” associated with the Supreme Court’s 1962 decision in *Brown Shoe Co. v. United States*.¹⁶⁸ There, the court laid out seven “practical indicia” that

engaged in the anticompetitive conduct. The selection of the candidate market does not, however, change the test or pre-determine the outcome.”)

ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 224–5. (“To determine whether monopoly power exists, it is necessary to define the relevant market in which the power over price or competition is to be appraised. ... The boundaries of a relevant product market are determined principally by the reasonable interchangeability of use of the produces; products that are reasonably interchangeable in use generally compete with each other and are thus part of the same market.”)

Carlton, Dennis W. and Jeffrey M. Perloff (2000), *Modern Industrial Organization*, 3rd ed., Reading, MA: Addison-Wesley, at 611–12, 612. (“A proper definition of the product dimension of a market should include all those products that are closed demand or supply substitutes.”)

¹⁶⁴ Pindyck, Robert S. and Daniel L. Rubinfeld (2001), *Microeconomics*, 5th ed., Upper Saddle River, NJ: Prentice-Hall, Inc., at 22. (“Changes in the price of related goods also affect demand. Goods are substitutes when an increase in the price of one leads to an increase in the quantity demanded of the other.”)

¹⁶⁵ Just because a very large price increase in one product creates a small increase in demand for the other product does not necessarily mean that the two products are in the same market. Products that are not sufficiently comparable are, thus, not included in the relevant market, either due to product attributes, perceptions, or geography.

See:

U.S. Department of Justice and Federal Trade Commission, “Merger Guidelines,” 12/18/2023, § 4.4, available at: https://www.ftc.gov/system/files/ftc_gov/pdf/P234000-NEW-MERGER-GUIDELINES.pdf. (“[T]he competitive significance of the parties may be understated by their share when calculated on a market that is broader than needed to satisfy the considerations above, particularly when the market includes products that are more distant substitutes, either in the product or geographic dimension, for those produced by the parties.”)

¹⁶⁶ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 226. (“The relevant geographic market comprises all physical territories in which actual or potential producers are located and to which customers can reasonably turn for sources of supply.”)

¹⁶⁷ Carlton, Dennis W. and Jeffrey M. Perloff (2000), *Modern Industrial Organization*, 3rd ed., Reading, MA: Addison-Wesley, at 611–12, 612. (“A market definition specifies the competing products and geographic area in which competition occurs that determines the price for a given product.”)

¹⁶⁸ *Brown Shoe Company v. United States*, 370 U.S. 294 (1962), at 325. (“The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and

may be instructive, but not necessary, for defining what is referred to as a “submarket,” but is understood as and synonymous with a “market”¹⁶⁹: (i) industry recognition of a submarket; (ii) the product’s peculiar characteristics and uses; (iii) unique production facilities; (iv) distinct customers; (v) distinct prices; (vi) sensitivity to price changes; (vii) specialized vendors.¹⁷⁰ In practice, the *Brown Shoe* indicia are often useful as “evidentiary proxies for direct proof of substitutability.”¹⁷¹ In that sense, a *Brown Shoe* analysis allows the fact finder to determine the substitutability between products without explicitly calculating a cross-price elasticity.

- (52) One common analytical tool that is used to define relevant markets in merger analysis is the Department of Justice’s and Federal Trade Commission’s Hypothetical Monopolist Test (“HMT”). The HMT considers a small but significant non-transitory increase in price (“SSNIP”) of the product at issue and defines the relevant market as that in which a hypothetical monopolist could profitably impose a SSNIP.¹⁷² The SSNIP test captures economic

substitutes for it. However, within this broad market, well defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes. *United States v. E.I. du Pont de Nemours & Co.*, 353 U. S. 586, 353 U. S. 593-595. The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.”)

¹⁶⁹ It is generally understood that the use of the term “submarket” in *Brown Shoe* is synonymous with “market.” See, for example:

Francis, Daniel and Cristopher Jon Sprigman (2023), *Antitrust: Principles, Cases, and Materials*, American Bar Association, Antitrust Law Section, at 80. (“In the following extract, and in some other cases, the Court uses the term ‘submarket.’ Do not be led astray by this confusing term, which crops up from time to time but could probably be banned without doing any harm (and, thus, probably should be banned in the interests of clarity). It is best understood to simply mean ‘market.’”)

¹⁷⁰ *Brown Shoe Company v. United States*, 370 U.S. 294 (1962), at 325. (“The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it. However, within this broad market, well defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes. *United States v. E.I. du Pont de Nemours & Co.*, 353 U. S. 586, 353 U. S. 593-595. The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.”)

See, also:

FTC v. Swedish Match, 131 F. Supp. 2d 151 (D.D.C. 2000), at 159. (“The Court in *Brown Shoe* provided a series of factors or ‘practical indicia’ for determining whether a submarket exists including ‘industry or public recognition of the submarket as a separate economic entity, the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.’ 370 U.S. at 325, 82 S. Ct. 1502. As ‘practical indicia,’ these factors are not necessarily criteria to be rigidly applied.”)

Francis, Daniel and Cristopher Jon Sprigman (2023), *Antitrust: Principles, Cases, and Materials*, American Bar Association, Antitrust Law Section, at 98. (“Since the Court described these factors as ‘practical indicia’ rather than requirements, subsequent cases have found that submarkets can exist even if only some of these factors are present[.]”)

¹⁷¹ *Rothery Storage & Van Co. v. Atlas Van Lines, Inc.*, 792 F.2d 210, at 218 & n.4, 219 (D.C. Cir. 1986) (emphasis added).

¹⁷² U.S. Department of Justice and Federal Trade Commission, “Merger Guidelines,” 12/18/2023, § 4.3 available at: https://www.ftc.gov/system/files/ftc_gov/pdf/P234000-NEW-MERGER-GUIDELINES.pdf.

considerations of substitutability by considering potential substitution among competing products following the small, non-transitory change in price. The Merger Guidelines suggest the consecutive application of the HMT to define the relevant product market and then again to define the relevant geographic market.¹⁷³

- (53) The HMT/SSNIP test is difficult to implement quantitatively, in general. I do not conduct a quantitative SSNIP test in connection with my analysis of the relevant market; instead, I draw upon the concept of reasonably substitutable products underlying the SSNIP test and that is at the heart of the relevant market analysis, as set forth in *Brown Shoe*. In defining the relevant market in this matter, I focus on the fundamental question in market definition analysis: what is the set of products to which customers can and do readily turn as reasonable substitutes for the product at issue? In other words, “[a]lthough courts and antitrust enforcement agencies consider a range of factors, the single most important consideration in antitrust relevant market definition is the consumer’s ability and propensity to substitute one product for another.”¹⁷⁴
- (54) In a case where economists can observe changes in relative prices between two (potentially substitutable) products, observing consumer behavior, specifically changes over time in purchasing behavior, can provide insights into the extent to which those two products are substitutable and, sometimes, the strength of that substitution relationship.
- (55) One economically reasonable approach to determining substitutability is to examine consumer substitution at the borders of a candidate market and to analyze how entry by various types of potential competitors into that market affects the performance (and behavior) of an incumbent.¹⁷⁵ This entry can function as a “natural experiment” that may identify purchasing patterns between candidate goods.¹⁷⁶ If an incumbent firm is impacted by a new entrant, or reacts to that entity’s entrance, this is evidence that the two firms may compete in

¹⁷³ U.S. Department of Justice and Federal Trade Commission, “Merger Guidelines,” 12/18/2023, § 4.3 available at: https://www.ftc.gov/system/files/ftc_gov/pdf/P234000-NEW-MERGER-GUIDELINES.pdf.

¹⁷⁴ Newberg, Joshua A. (2000), “Antitrust for the Economy of Ideas: The Logic of Technology Markets,” *Harvard Journal of Law & Technology* 14(1): 83–137, at 90–91.

¹⁷⁵ See, for example:

FTC v. Whole Foods Mkt, Inc., 548 F.3rd 1028 (D.C. Cir. 2008).

¹⁷⁶ Coate, Malcolm B. (2013), “The Use of Natural Experiments in Merger Analysis,” *Journal of Antitrust Enforcement* 1(2): 437–467, at 447–449.

the same market.¹⁷⁷ This would be a necessary condition for two firms to compete in the same market, but it is not a sufficient condition.

- (56) Theoretical and empirical findings in economics suggest that incumbent firms also respond to even the *belief* that a rival firm or product may enter their market when they perceive that the threat of entry is a credible threat.¹⁷⁸ For example, economists have shown that when incumbent airline companies believe a lower-cost option may provide future service on a route they travel, these incumbents routinely lower their prices for trips on those routes in response.¹⁷⁹
- (57) Steam is a two-sided platform, and these market definition tools must be applied to *both* sides of the platform to properly determine the relevant market.¹⁸⁰ Historically, Valve has charged

¹⁷⁷ Coate, Malcolm B. (2013), "The Use of Natural Experiments in Merger Analysis," *Journal of Antitrust Enforcement* 1(2): 437–467, at 447. ("The core study identified an impact for the entry of another premium, natural, organic, supermarket (PNOS) on the margins of the incumbent PNOS competitor, while showing the entry of normal supermarkets did not affect PNOS margins. The plaintiff interpreted this data as substantiating both the narrow market definition and the competitive concern stemming from the merger[.]")

¹⁷⁸ See, for example:

Salop, Steven C. (1979), "Strategic Entry Deterrence," *The American Economic Review* 69(2): 335–338, at 335. ("[A] strategic entry barrier is purposely erected to reduce the possibility of entry.")

Goolsbee, Austan and Chad Syverson (2008), "How Do Incumbents Respond to the Threat of Entry? Evidence from the Major Airlines," *Quarterly Journal of Economics* 123(4): 1611–1633.

Tenn, Steven and Brett W. Wendling (2014), "Entry Threats and Pricing in the Generic Drug Industry," *The Review of Economics and Statistics* 96(2): 214–228.

¹⁷⁹ Goolsbee, Austan and Chad Syverson (2008), "How Do Incumbents Respond to the Threat of Entry? Evidence from the Major Airlines," *Quarterly Journal of Economics* 123(4): 1611–1633, at 1611. ("We find that incumbents cut fares significantly when threatened by Southwest's entry. Over half of Southwest's total impact on incumbent fares occurs before Southwest starts flying. These cuts are only on threatened routes, not those out of non-Southwest competing airports.")

This effect has also been shown in the pharmaceutical industry and, in some instances, in the cable TV industry. See:

Tenn, Steven and Brett W. Wendling (2014), "Entry Threats and Pricing in the Generic Drug Industry," *The Review of Economics and Statistics* 96(2): 214–228, at 214. ("In smaller drug markets, we find that price falls in response to an increase in potential competition.")

Seamans, Robert C. (2012), "Threat of Entry, Asymmetric Information, and Pricing," *Strategic Management Journal* 34: 426–444 at 426. ("I then study pricing in the U.S. cable TV industry to show that pricing patterns of incumbent cable TV systems are consistent with limit pricing when the relationship between the incumbent and potential entrant is characterized by asymmetric information.")

¹⁸⁰ Evans, David S. (2003), "The Antitrust Economics of Two-Sided Markets," *Yale Journal on Regulation* 20(2): 1–89, at 63. ("In the case of mergers, the U.S. Department of Justice and Federal Trade Commission have developed techniques for determining whether a firm is in the market. They start with the firm(s) under consideration and add competitors to the market. The market boundary results (in a geographic or product dimension) when the collection of firms could, acting as a monopolist, raise price by a small but significant non-transitory amount (often taken to be 5-10 percent). If the collection of firms could do so, then presumably the firms 'outside of the market' do not constrain the firms 'inside the market' much. For two-sided markets, this analysis must pay attention to both sides. It should consider firms that currently supply both sets of customers.")

and collected Steam fees on purchases of games and other game content by taking a commission of sales from the publisher side of the market. In considering the principles underlying a proper market definition analysis, I assume that this pricing structure that Valve implements in the actual world would not change given a change in the level of Steam’s prices. That is, Steam would not add any new fee types and would only change its existing commission fee if it is imposing a price increase. It would not charge a fee to game purchaser users.

4.1.2. Reference product and candidate market

- (58) Based on my expertise as an economist, my experience, and the facts of the case, my candidate market is the market for third-party digital PC game distribution via platforms, where the two sides of the platform are (a) game publishers, on the one hand, and (b) game players, on the other. From the point of view of publishers, the product at issue is access to the platform. By buying access to the platform through an agreement to pay a commission to Steam for all transactions, developers are able to offer games to the user/gamer side of the platform. For users/gamers, the product they seek to acquire is games (and various in-game features). These platforms host both the publishers and gamers on the platform, connecting the two sides and facilitating transactions between them and gameplay. I recognize that some courts have described similarly structured platforms as “transaction” platforms or “transaction” markets, where the product at issue to both sides is a “transaction.”¹⁸¹ Whether the product at issue is framed as a “transaction” or, alternatively, as access to the platform (publishers) and the purchase of a game (game players), the analysis is the same. Regardless, there are two sides to the market, married by a simultaneous purchase and sale of a good (a game).
- (59) A “third-party digital PC game distribution platform” is a platform that allows PC game publishers—specifically publishers other than the platform operator—to digitally distribute and sell games. A third-party digital PC game distribution platform on which users can also play the game allows for continuous interaction between player and publisher, including during gameplay. Examples of third-party digital PC game distribution platforms include Steam, EGS, and GOG Galaxy. See Table 1.

¹⁸¹ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (U.S. Supreme Court 2018).

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Table 1: Third-Party Digital PC Game Distribution Platforms¹⁸²

Platform	Publishers	Launch Year
Steam	Valve and other publishers (2005–present)	2003
EGS	Epic and other publishers	2018
GOG Galaxy	CD Projekt and other publishers	2014
EA App (f/k/a Origin)	EA and other publishers (2011–2022)	2011
Ubisoft Connect (f/k/a Uplay)	Ubisoft and other publishers (2013–c. 2024) ¹⁸³	2009
Microsoft Store (f/k/a Windows Store)	Microsoft and other publishers	2012
Itch.io	Other publishers	2013
Discord Store	Discord and other publishers (2018–2019)	2018

(60) Valve considers these third-party digital PC game distribution platforms to be Steam's competitors.¹⁸⁴ For example, a Valve email discussing the launch of EGS states: "The entrance

¹⁸² See Attachment B-1.

¹⁸³ I understand that as of the date of this report, Ubisoft no longer offers third-party games on Ubisoft Connect. In 2023, the Ubisoft Store only had [REDACTED] of third-party sales in the U.S. across both PC and console. See:

Ubisoft, Sales Data, c. 2023 (HIGHLY CONFIDENTIAL ATTORNEYS EYES ONLY Valve Subpoena data 29Nov23.xlsx., at tab 'Q1 B'). See also:

Rietveld Report, 2/8/2024, §VII.B.i.

¹⁸⁴ For additional examples, see:

Valve, Emails Regarding [REDACTED] SDA, 7/23/2019–4/27/2020 (VALVE_ANT_2814301–311, at VALVE_ANT_2814309), available at Cassidy Gerber, Dep. Tr., 10/5/2023, Exhibit 102. (When discussing the "material parity" requirement of Valve's SDA, Valve made it clear that it is only concerned with the PC version of games on Steam relative to those offered on competing PC platforms, stating that "If a game on Steam is going to be materially different from the game on other PC platforms, we'd rather just not have the game on Steam in the first place[.]")

Erik Johnson, Valve employee, testified that [REDACTED]

[REDACTED] Mr. Johnson further testified that if a game was offered on EGS but not on Steam, some customers would go to EGS to buy the game. Further, a set of 2019 internal emails also show that Valve [REDACTED]. See:

of a strong competitor to the market absolutely has our attention.”¹⁸⁵ As another example, a Valve statement discussing the PC gaming “landscape” states that the [REDACTED]

[REDACTED]¹⁸⁶ Similarly, in an internal email chain discussing points for the 2020 GDC, Valve considered EGS a competitor.¹⁸⁷ Valve deposition testimony also demonstrates that Valve competes with third-party digital PC game distribution platforms. For example, Valve employees Jason Ruymen, Erik Johnson, and DJ Powers testified that EGS and/or Discord are competitors to Steam.¹⁸⁸

Erik Johnson, Dep. Tr., 9/26/2023, at 203:22–205:16, 214:24–216:10. [REDACTED]

[REDACTED] Q. So your understanding of Epic exclusivity was not that the game would be exclusive to the Epic Games Store but that it would not be on the Steam Store; is that correct? A. Functionally, that’s what ended up happening”; “Q. So if a product was available on Epic Games Store but was not available on Steam, would you anticipate that a customer would go get it from the Epic Games Store? A. Some would, some wouldn’t. . . .”

Valve, Emails Regarding Upcoming Games, 1/28/2019–2/6/2019 (VALVE ANT 2712829–31, at VALVE ANT 2712830), available at Erik Johnson, Dep. Tr., 9/26/2023, Exhibit 23. [REDACTED]

Valve, Emails Regarding Game Giveaway, 11/6/2017–11/29/2017 (VALVE ANT 0189171–73, at VALVE ANT 0189171), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 265. (“ . . . [REDACTED]

¹⁸⁵ Valve, Email Regarding Valve’s Statement On Epic’s Entry, 1/28/2019 (VALVE_ANT_0405724–26, at VALVE_ANT_0405726).

¹⁸⁶ Valve, Competitive Landscape Analysis, undated (VALVE_ANT_1221442–44, at VALVE_ANT_1221442).

¹⁸⁷ Valve, Emails Regarding 2020 Steam Business, 1/31/2020–3/2/2020 (VALVE_ANT_2417069–73, at VALVE_ANT_2417071–72), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 49.

¹⁸⁸ Jason Ruymen, Dep. Tr., 9/19/2023, at 143:2–7. (“Q. Epic also has the Epic Games Store; is that accurate? A. Yes. Q. And does the Epic Games Store compete with Steam store? A. Yes.”)

Erik Johnson, Dep. Tr., 9/26/2023, at 248:13–18. (“Q. So it looks like there was a lot of questions about Discord’s -- and their announcement of a game store and how that would potentially impact Steam. Is that fair? A. I would just frame this as a conversation about a competitor.”)

See also: Erik Johnson, Dep. Tr., 9/26/2023, at 244:11–13, 246:1–24. (“Q. So you met with [REDACTED] prior to their announcement of about a launch of its own game store? A. Yes.”; “Q. They were meeting with you to talk with you about their future plans to open up a competing game store? A. I think so, yeah. . . .”)

See also: Valve, Emails Regarding Discord Store, 8/9/2018 (VALVE_ANT_0060458–62), available at Erik Johnson, Dep. Tr., 9/26/2023, Exhibit 27.

Valve, Email Regarding Epic, 1/25/2019 (VALVE_ANT_2417190–93, at VALVE_ANT_2417190), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 47.

DJ Powers, Dep. Tr., 9/28/2023, at 142:19–143:17. (“Q. And this email is notes or thoughts on those meetings, and your thoughts on sort of the issues that you guys discussed; is that fair? A. Yeah. It’s a -- partly a recap of conversations we had, and it’s partly -- it’s partly getting down in one place our thoughts about a new competitor entering the market. Q. Oh, and the new competitor entering the market is Epic? A. Yeah. And Discord. Q. And with Epic we’re talking specifically about the Epic Game Store -- A. Yeah. . . .”)

- (61) Popular publications also acknowledge that third-party digital PC game distribution platforms compete with Steam in this market. For example, a 2011 CNET article claims that EA is “tak[ing] aim at Steam” with the launch of Origin, and that Origin “is EA’s answer to Steam[.]”¹⁸⁹ In 2018, a Morgan Stanley analyst report stated that Epic’s launch of EGS would undercut “Steam’s headline take rate by more than half (12% vs. 30%). We see these signs of competition as bullish for content owners vs. game distribution platforms[.]”¹⁹⁰ In addition, a 2018 Verge article discussing the launch of the Discord platform states: “Discord. . . is now using its pervasiveness in the PC ecosystem to start competing with Valve’s Steam marketplace, which is far and away the largest PC game distribution platform.”¹⁹¹ A 2021 Verge article discusses both Microsoft’s and Epic’s attempts to compete with Steam using a reduced commission rate to entice developers to the respective platforms.¹⁹²
- (62) In my analysis, I also consider whether including third-party distribution of digital PC games through non-gameplay platforms should be a part of the relevant market. This includes distribution through online retail stores (*e.g.*, BestBuy.com, Target.com) and sales platforms (*e.g.*, Humble Store). Examples of digital platforms without gameplay include:
- Humble Bundle: Launched in 2010, Humble Bundle is a digital platform that sells PC games and digital content.¹⁹³ Humble is a publisher and sells other publishers’ games either individually or through Bundles, which often rely on game keys that participating publishers get from such a platform as Steam.¹⁹⁴

¹⁸⁹ CNET, “EA Launches Origin, Takes Aim at Steam,” 6/3/2011, <https://www.cnet.com/tech/gaming/ea-launches-origin-takes-aim-at-steam/>.

¹⁹⁰ Morgan Stanley, “Shutoff Valve? What Epic’s Game Store Signals,” 12/4/2018 (VALVE_ANT_0059565–570, at VALVE_ANT_0059565).

See, also:

Forbes, “‘Fortnite’ Developer Epic Is Launching a Huge Steam Competitor With A Better Cut for Devs,” 12/4/2018, <https://www.forbes.com/sites/insertcoin/2018/12/04/fortnite-developer-epic-is-launching-a-huge-steam-competitor-with-a-better-cut-for-devs/>. (“Epic has announced the Epic Store, a direct competitor to Steam that undercuts the rate Valve’s service gives to developers.”)

¹⁹¹ The Verge, “Discord’s Game Store Launches Globally Today With Indie Gems Like Hollow Knight and Dead Cells,” 10/16/2018, <https://www.theverge.com/2018/10/16/17980810/discord-digital-game-distribution-store-steam-competitor-nitro-subscription-service>.

¹⁹² The Verge, “Microsoft Shakes Up PC Gaming by Reducing Windows Store Cut to Just 12 Percent,” 4/29/2021, <https://www.theverge.com/2021/4/29/22409285/Microsoft-store-cut-windows-pc-games-12-percent>.

¹⁹³ Humble Bundle, What is Humble Bundle, <https://www.humblebundle.com/about> (accessed 12/17/2023).

While the platform itself was launched in 2010, Humble Bundle as a company was incorporated in 2011. See:

Jeffrey Rosen, Dep. Tr., 11/17/2023, at 43:12–17. (“Q. Okay. You said that Humble Bundle Incorporated, was organized in 2011; is that correct? A. Correct. Q. Okay. And were you a cofounder of Humble Bundle, Incorporated? A. Correct.”)

¹⁹⁴ Humble Bundle, What is Humble Bundle, <https://www.humblebundle.com/about> (accessed 12/17/2023).

- Green Man Gaming (“GMG”): Launched in 2010, GMG is digital platform that sells PC game keys that can be redeemed on platforms like Steam.¹⁹⁵ GMG offers publishing and distribution services.¹⁹⁶
- WinGameStore: Launched in 2014, WinGameStore is a digital platform that distributes “digital download games for Windows and Linux.”¹⁹⁷ The platform is an authorized digital retailer of “officially licensed games direct from over 1000+ different publishers” and sells games in over 240 countries.¹⁹⁸
- GamersGate: Launched in 2004, GamersGate is a digital platform that is an “officially licensed store,”¹⁹⁹ selling “official keys.”²⁰⁰ GamersGate claims that it has “teamed up with many publishers from around the world” and has a focus on offering games as cheaply as possible.²⁰¹

(63) These platforms differ from Steam in that they are sales platforms; users cannot play games on the platform. These sales platforms rely on game-play platforms, in that they sell game keys (*e.g.*, Steam Keys) to games that consumers then redeem on those other platforms (*e.g.*, Steam).²⁰² As such, while they facilitate the transaction between a publisher and a consumer, only the purchase is facilitated. All other interactions and transactions between the two sides of the platform occur on game-play platforms. Arguably, these sales platforms should not be included within the relevant market. However, in order to be conservative, I include these

¹⁹⁵ Green Man Gaming Website, We’re Green Man Gaming, <https://www.greenmangaming.com/who-we-are/> (accessed 9/18/2023).

Games Beat, “Green Man Gaming’s New Program Simplifies the Publishing Process,” 1/24/2020, <https://venturebeat.com/games/green-man-gamings-new-program-simplifies-the-publishing-process/>. (“[GMG] works with companies like Steam, Uplay, Origin, and the Epic Games Store to sell game keys that customers then redeem on those respective platforms.”)

¹⁹⁶ Venture Beat, “Steam Competitor Green Man Gaming Launches Its Own Publishing Arm, Green Man Loaded,” 9/30/2014, <https://venturebeat.com/games/green-man-loaded/>.

Green Man Gaming Website, Publishing, <https://corporate.greenmangaming.com/publishing/> (accessed 6/13/2023).

¹⁹⁷ WinGameStore, About WinGameStore, <https://www.wingamestore.com/information/About/> (accessed 11/13/2023).

¹⁹⁸ WinGameStore, About WinGameStore, <https://www.wingamestore.com/information/About/> (accessed 11/13/2023).

¹⁹⁹ GamersGate Website, Help Center, <https://www.gamersgate.com/support/general/is-gamersgate-legit/> (accessed 1/30/2024).

²⁰⁰ GamersGate Website, About Us, <https://www.gamersgate.com/about-us/> (accessed 1/30/2024).

²⁰¹ GamersGate Website, About Us, <https://www.gamersgate.com/about-us/> (accessed 1/30/2024).

²⁰² See, for example:

Humble Bundle, What is Humble Bundle, <https://www.humblebundle.com/about/> (accessed 12/17/2023). (“When you purchase something on Humble Bundle, you’ll get a key to redeem on Steam, Ubisoft Connect Desktop App, GOG, or another platform.”)

Green Man Gaming, About Us, <https://www.greenmangaming.com/who-we-are/> (accessed 1/25/2024). (“When purchasing with us you’ll instantly get your key for games that have already been released.”)

platforms in the relevant market—including *additional* entities in the relevant market only serves to understate, rather than overstate, Valve’s market share and market power.

4.1.3. Considerations of potentially substitutable products in the relevant market

- (64) The candidate market is the market for third-party digital PC game distribution via platforms, where the two sides of the transaction are game publishers and game players who transact through the platform. Thus, potential substitutable options for publishers and gamers must also allow for the facilitation of these transactions between PC game publishers and PC gamers.
- (65) In making distribution choices, publishers will consider a variety of factors, in addition to the ability of gamers to be able to access and play the game. These include, for example, the size of the user base, the availability of other services from the platform operator, including game development tools, marketing support, and the like. For example, Valve provides a large global user base through the Steam platform, but also provides developer access to Steamworks tools and services. Valve highlights the importance of these characteristics. For example, a 2015 Valve presentation states that Steam is used by “[a]ll major game developers and publishers” and provides developers with “[a] suite of game development tools” and access to a “robust community” where developers can connect with customers.²⁰³ Additionally, emails between Valve employees highlight Steam’s user base stating, “Valve operates Steam, which is the dominant PC gaming platform in the industry” with “65 million monthly unique visitors on average” and “14 million peak concurrent users on any given day[.]”²⁰⁴ The Steamworks

²⁰³ Valve, Valve Overview, c. 2015 (VALVE_ANT_0711725.pptx, at slides 3–4, 10).

²⁰⁴ Valve, Valve Quick Facts, 11/29/2018 (VALVE_ANT_1747293).

Other internal Valve emails and documents discuss the importance of Steam’s user base, see, for example:

Valve, “GDC 2020 – Competitor Analysis,” 2020, (VALVE_ANT_0019400–02, at VALVE_ANT_0019401), available at Scott Lynch, Dep. Tr., 10/13/2023, Exhibit 156. (“Success can happen for anyone on Steam, from Triple-A to the tiniest Indie[.] The global reach of Steam is huge and still growing, for all tastes[.] Developers from everywhere and anywhere [distribute games on Steam.]”)

Valve, Emails Regarding Concepts for Indie Talks, 2/25/2020–3/10/2020 (VALVE_ANT_0813962–65, at VALVE_ANT_0813964). (Listing points worth highlighting to indie developers, which include: “despite all the talk of ‘indieapocalypse,’ more and more games (and many nobody has ever head of in the press) are finding sustainable success on Steam” and “the ever increasing global reach of Steam means you might find an audience you’d never thought of specifically catering to[.]”)

Valve, “[REDACTED] and Steam,” undated (VALVE_ANT_2971871.pptx, at slides 3–4). (“Size of Channel[:] Steam sales account for [REDACTED] of total sales (retail + online). Generally bigger than any individual retailer[.] . . . Steam’s install base represents a significant % of game buyers. Steam exposure and marketing drives both online and retail.”)

webpage currently advertises that developers distributing on Steam can reach Steam's growing global audience, boost their marketing power by "[t]ak[ing] advantage of Steam's 1 trillion impressions a day[,]" manage their game's business, and enhance player experience.²⁰⁵

- (66) Similarly, other third-party digital PC game distribution platforms advertise and offer such developer benefits. For example, Epic and GOG webpages advertise the tools and services that they provide developers for game development and distribution.²⁰⁶ For example, an Epic webpage advertises that EGS allows developers to "[r]each a [g]lobal [a]udience" by providing "[d]irect distribution to over 230 million Epic users across 187 countries with 16 languages supported."²⁰⁷ Non-gameplay platform distributors also promote their user base to entice publishers.²⁰⁸
- (67) When considering their game distribution options, publishers may consider distributing games through, for example, third-party physical PC game distribution, such as through brick-and-mortar stores; first-party digital PC game distribution, in which the publishers distribute the games themselves; or non-PC game distribution, in which games are written to be played on devices such as consoles or smartphones. For a game publisher, value is realized

Valve, "█████ and Steam," undated (VALVE_ANT_2971872.pptx, at slides 3–4).

Valve, "█████ and Steam," undated (VALVE_ANT_2971873.pptx, at slides 3–4).

²⁰⁵ Steamworks Website, Home Page, <https://partner.steamgames.com/> (accessed 10/26/2023).

²⁰⁶ Epic Games Website, Epic Games Store Offers App, Software and Game Distribution, <https://store.epicgames.com/en-US/distribution> (accessed 10/30/2023). ("Epic offers an ecosystem of tools, services, and communities to help anyone create, power, and distribute software. With a single Epic Games account, anyone can create with Unreal Engine, enhance with Epic Online Services and Kids Web Services, and distribute PC games on the Epic Games Store.[1]")

Epic Games Website, Online Services, <https://dev.epicgames.com/en-US/services> (accessed 2/7/2024). ("Epic Online Services is an open and modular set of online services for game development. Continuously evolving to serve all games and their players, today it gives creators freedom to distribute their games across all platforms, and their players access to all friends.")

GOG.com, "Benefits of Releasing Your Game on GOG – A Guide for Indie Game Developers," 6/7/2023, <https://www.gog.com/blog/benefits-of-releasing-your-game-on-gog-a-guide-for-indie-game-developers/>. ("GOG's commitment to providing efficient, developer-friendly solutions ensures that your experience on our platform is smooth, rewarding, and optimized for success. Using our intuitive tools allows you to create a dedicated GOG build fast, streamlining the release process.")

²⁰⁷ Epic Games Website, Epic Games Store Offers App, Software and Game Distribution, <https://store.epicgames.com/en-US/distribution> (accessed 10/30/2023).

²⁰⁸ See, for example:

Humble Website, What is Humble Bundle, <https://www.humblebundle.com/about> (accessed 6/13/2023). ("12,000,000+ customers[:] The Humble community has reached over 12 million customers from around the globe.")

Green Man Gaming Website, Store, <https://corporate.greenmangaming.com/store/> (accessed 6/13/2023). ("We've learned a lot in our time, so sorting out regional pricing, fraud protection and selling through over 140 payment methods to support our millions of customers worldwide is our standard.")

when gamers have the opportunity to find a game; thus, publishers want to maximize access to their games to PC gamers.

- (68) Publishers do not have to make a distribution choice that is exclusive; publishers will often consider (and may choose) to publish a game through multiple distribution channels. When a publisher chooses to publish a game across multiple distribution channels (or multiple outlets within one channel), it is a form of “multihoming.” Multihoming across distribution options can be consistent with these options being substitutes; if publishers could (or do) profitably switch to a new distribution method in response to an increase in the cost of selling games on through one channel of distribution, that suggests a possible substitutable relationship. However, multihoming is competitively meaningful only if it results in a publisher (or gamers) reducing their engagement with the first channel of distribution, affecting the profitability of that first channel and engendering a competitive response. That would imply a substitutable relationship between the options. However, rather than necessarily implying a substitutable relationship, multihoming can allow publishers to increase reach and capture different, *complementary* groups of gamers. As I discuss below, I conclude that these alternative distribution channels—such as brick-and-mortar PC game distribution, first-party digital PC game distribution, and non-PC game distribution—are overwhelmingly *complementary* to third-party digital PC game distribution via platforms and are not competitively meaningful substitutes.²⁰⁹ Moreover, these complementary distribution avenues are not readily available to all developers.

Other third-party PC game distribution

- (69) Publishers can choose physical distribution rather than third-party digital PC game distribution via platforms. I conclude that physical distribution is not in the relevant market, because it is not an adequate substitute for digital third-party PC game distribution services. Because the user experience in a digital shopping environment is so different from a physical environment, users are unlikely to regard digital shopping and brick-and-mortar stores as substitutes for game purchases. In addition, a publisher distributing games through physical distribution avenues incurs (non-trivial) costs and frictions not found on digital third-party

²⁰⁹ Any substitution is not the appropriate economic standard for consideration of the bounds of a relevant market. For example, while in theory someone might substitute milk for beer in some contexts, what matters is the cross-elasticity of demand between the two goods. If a hypothetical beer monopolist raised prices above competitive levels by a small percentage, it is exceedingly unlikely that party hosts, bars, and restaurants would begin serving milk. Instead, they would likely absorb the price increase and continue to serve beer. This example illustrates how there must be meaningful substitution to the alternative product in the presence of a small price increase in order for the alternative product to be potentially included in the relevant market.

distribution platforms. Given that, developers would not likely view these options to be reasonable substitute channels of distribution for their games. This conclusion is consistent with the move away from physical distribution and towards digital distribution. A small change in price is very unlikely to lead users to switch away from digital distribution and towards physical distribution, much less sufficient enough switching to render a price increase unprofitable.

- (70) For users, the game shopping experience on third-party digital PC game distribution platforms is much more flexible than with physical distributors. For example, digital third-party PC game distribution platforms are continuously available to users online, while traditional retail is restricted to certain operating hours. Unlike physical retail stores, users can instantaneously download and play purchased games on third-party digital PC game distribution platforms. Users can pause and resume shopping at any time without having to travel to stores, and users can search for and save games to a personal wish list to purchase later. Indeed, digital third-party distribution platforms advertise wish lists as a way for developers to boost their game’s visibility and connect with customers.²¹⁰ This feature is important to users, and thus to publishers looking to distribute their games.²¹¹
- (71) In addition, user search is different on digital platforms versus physical third-party distributors in ways that are economically meaningful to consumers. When searching for games on Steam, for example, users can filter games by price, tag,²¹² number of players, and supported languages; users can sort those search results based on relevance, release date,

²¹⁰ See, for example:

Steamworks Website, Wishlists, <https://partner.steamgames.com/doc/marketing/wishlist> (accessed 11/2/2023).

Epic Games Website, Product Marketing Tips, <https://dev.epicgames.com/docs/epic-games-store/publishing-tools/publishing-process/best-practicefor-store-presence/> (accessed 11/2/2023).

Green Man Gaming, “New Site Feature: Get Equipped with The Want List,” 8/2/2016, <https://www.greenmangaming.com/blog/the-lowdown-the-wantlist/>.

²¹¹ See, for example:

DualShockers, “Epic Game Store Finally Adds a Wishlist Feature, 3/10/2020, <https://www.dualshockers.com/epic-game-store-adds-wishlists/>. (“Wishlists are a much-needed feature for any online store. Having an easy way to save games as a reminder to yourself feels essential with often digital games go on sale. Players are always looking for good deals and a wishlist is the easiest to find out when games you want to buy drop in price.”)

Valve, Emails Regarding Game Promotion, 1/23/2018–4/17/2020 (VALVE_ANT_0951827–46, at VALVE_ANT_0951827). (A publisher asks Valve: “We did a Daily Deal on March 27th, is there any room to do something else mid-May? Like a Weekend deal, something that will help us increase visibility and wishlist count for [REDACTED]”)

²¹² Steam allows developers, players with non-limited accounts, and Steam moderators to “tag” games based on game genre, visual properties, themes, moods, and features that users can then filter by when shopping for games on Steam. See: Steamworks, Website, Steam Tags, <https://partner.steamgames.com/doc/store/tags> (accessed 11/1/2023).

price, and user reviews.²¹³ Some other third-party digital PC game distribution platforms provide similar filtering tools that allow customers to find games more quickly.²¹⁴ Digital distributors may also tailor their platforms to customers with personalized recommendations based on past purchases or data from other customers.²¹⁵ For example, Valve promotes various recommendation features including a customized home page, Discovery Queue, and Recommendation Feed.²¹⁶ Filtering and recommendation features provide a more seamless game search and purchase process compared to the consumer experience at brick-and-mortar stores. With distribution through brick-and-mortar stores, users must spend time researching games *prior* to visiting the store and physically purchasing games. Comparison shopping across games is more difficult in a physical environment, especially along the dimensions available on digital third-party PC game platforms. Thus, publishers receive a very different bundle of services with digital distribution as compared to physical distribution, including more ways in which users can learn about/find/purchase their games; accordingly, publishers are unlikely to view digital and brick-and-mortar third-party PC game distribution as a reasonable economic substitute.

²¹³ Steam Website, Store Search, <https://store.steampowered.com/search/?term=> (accessed 11/1/2023).

²¹⁴ See, for example:

Epic Games Website, Store Search, <https://store.epicgames.com/en-US/browse?sortBy=releaseDate&sortDir=DESC&category=Game&count=40> (accessed 11/2/2023).

Green Man Gaming Website, Store Search, <https://www.greenmangaming.com/all-games/> (accessed 11/2/2023).

GOG Website, Store Search, <https://www.gog.com/en/games> (accessed 11/2/2023).

²¹⁵ See, for example:

Valve, Steam Presentation, c. 2018 (VALVE_ANT_0000037–071, at VALVE_ANT_0000062). (“The [Steam] store is personalized for each user.”)

GOG, “GOG Galaxy Update: Explore DLCs and Choose What To Play Next With Ease,” 6/6/2023, https://www.gog.com/news/gog_galaxy_update_explore_dlcs_and_choose_what_to_play_next_with_ease. (“We all know this feeling when you’ve just finished a great title and the big question starts to rise: what should I play next? Well, to help you decide what adventure you should embark on, we’ve introduced the ‘Next to play’ widget in your ‘Recent’ view. This way you can easily see which gems from your gaming library you haven’t yet played and should give them a shot.”)

²¹⁶ Steam Website, The Discovery Update, <https://store.steampowered.com/about/newstore> (accessed 11/2/2023). (“Specifically, the new features at your disposal from the Home page include personalized recommendations based on your gameplay, reviews from your favorite community Curators, and powerful new search and discovery tools.”; “Your Steam Discovery Queue is a powerful, new way of exploring the most popular new releases that you haven’t yet seen. You can quickly browse through games that are suggested for you, and you can choose to follow the game, add it to your Wishlist, purchase it, or indicate that you are not interested. Your Discovery Queue is automatically refreshed each day with new, top-selling releases.”; “The Steam Recommendation Feed is a nearly endless list of recommendations designed to showcase the broad variety of titles available on Steam. Like the other recommendations throughout Steam, the feed will recommend to you titles based on the games you’ve been playing and what your friends are enjoying. But it also features well-reviewed titles that you may be interested in from categories across Steam.”)

- (72) Digital third-party PC game distribution platforms also provide users with a depth and breadth of offerings not possible in brick-and-mortar stores due to physical shelf space constraints that exist with physical distribution. Steam had approximately 18,000 unique products in its “main capsule” in 2018 and that main capsule “generate[d] millions of impressions every day[,]” compared to the “retail days [where g]ame success was gated by shelf space[.]”²¹⁷ Users can easily recognize that with physical distribution, store space constrains their choices. There are no such constraints on Steam.²¹⁸
- (73) Similarly, developers also recognize the constraints of physical distribution. David Rosen, CEO of Wolfire Games,²¹⁹ testified that Wolfire did not attempt to sell any of its games through brick-and-mortar retail due to “very limited physical shelf space devoted to PC games even at its heyday in the nineties. By the early 2000s, they would have like one shelf for that and the rest for consoles. And these days I’m not sure they would even have that one shelf. They would just have Steam gift cards or something like that. . . . We weren’t worried about commission from brick and mortar. It’s more the impossibility of just manufacturing and storing physical copies. Like even if we got a deal with Walmart, that they would sell or stock 10,000 units of Overgrowth, we didn’t really have the knowledge of how to do that.”²²⁰

²¹⁷ Valve, “What’s Going on in the (Game) World According to Steam?,” c. 2018 (VALVE_ANT_0058980.pptx, at Slide 13).

²¹⁸ For example, a Steam user in a Steam Forum thread states that “Gamestop has inventory space to worry about and Gamestop sets their own prices.” See:

Valve, Steam Forum Thread, 5/21/2016 (VALVE_ANT_1867767–7831, at VALVE_ANT_1867767).

See also: Valve, Steam Forum Thread, 5/21/2016 (VALVE_ANT_1867767–7831, at VALVE_ANT_1867814). (“To put it bluntly, Digital [sic] distributors don’t have the same pressures that force physical distributors to lower prices. For starters, one thing that drives physical prices down, in fact one of the major things, is the cost of stock. . . . There is also the fact that with games, each month past release sees interest and demand for the game dropping markedly. Each month the stock goes unsold, lessens the chance that it will ever be sold. So what do retailers do in these scenarios [sic], they try to make the product more attractive by lowering the price. An unsold product generates no revenue and no profit. They’d rather a smaller profit margin than no profit margin at all. Now with digital, lo and behold there are no shelves, no warehouses or storage room. You have theoretically limitless display space so those two major pressures are pretty much non-existent [sic] in digital. Those are the two main forces that drive down physical game prices.”)

²¹⁹ Wolfire Games Website, About, <https://www.wolfire.com/about> (accessed 1/16/2024).

²²⁰ David Rosen, Dep. Tr., 11/30/2023, at 41:8–13, 125:19–126:18. (“Q. . . now you are the only member of Wolfire Games, LLC; is that correct? A. That’s right.”; “Q. Did Wolfire ever attempt to have any of its games sold through brick-and-mortar retail? A. No. Q. Why not? A. It seems really unlikely for that to happen. There’s very limited physical shelf space devoted to PC games, even at its heyday in the nineties. By the early 2000s, they would have like one shelf for that and the rest for consoles. And these days I’m not sure they would even have that one shelf. They would just have Steam gift cards or something like that. Q. Did Wolfire consider whether the cost of distributing in brick or mortar store- --brick-and-mortar stores was too high in terms of commission or revenue share? THE WITNESS: We weren’t worried about commission from brick and mortar. It’s more the impossibility of just manufacturing and storing physical copies. Like even if we got a deal with Walmart that they would sell or stock 10,000 units of Overgrowth, we didn’t really have the knowledge of how to do that.”)

- (74) Digital distribution implies different business considerations compared to physical distributors; those differences are material to publishers. An internal Valve document discussing distribution with publisher ██████ states that Steam’s business model, margins, and cost structure are “entirely different” than retail.²²¹ Similarly, as early as 2003, Valve recognized that “[Valve’s] margin on a retail box is about ██████. This compares to the Steam version at ██████ Steam derives profit ██████.”²²² Publishers would need to consider these costs in their pricing, such that the physical distributor could still be profitable. Such costs do not need to be considered and/or absorbed by publishers in digital distribution.
- (75) In addition, Valve (and others) emphasize the relative convenience of digital distribution as a means of efficiently engaging users through a digital platform.²²³ The trade press also acknowledges the benefit of digital distribution. For example, a 2020 article states: “For more than a decade, video games have been steadily shifting away from physical sales toward digital distribution, much the same as music and film. The transition creates opportunities for game publishers and consumers alike: cut down on production and shipping costs while offering the convenience of downloading products from the comfort of home.”²²⁴

²²¹ Valve, Emails Regarding Distribution for ██████ 7/17/2015–7/24/2015 (VALVE_ANT_0340706–13, at VALVE_ANT_0340706).

As another example discussing the differences between the physical and digital distribution business model, see: Dark Catt, The Spokesman-Review Article, 4/30/2020 (DarkCatt_0000167–177, at DarkCatt_0000169).

²²² Valve, Emails Regarding Retail and Steam Mark-Ups, 10/24/2003 (VALVE_ANT_0051858).

²²³ Valve, Emails Regarding GOD Market, 12/22/2003–1/15/2004 (VALVE_ANT_0813844–46, at VALVE_ANT_0813845). (“Until now, there has been no viable alternative to retail -- narrowband delivery of a >400MB game was unacceptable for mainstream consumers. However, with the proliferation of broadband, and platforms such as Steam that enable content providers to deliver their products in a more efficient manor [sic], we are able to get mainstream consumers into the experience in less time that [sic] it takes to drive to the local software store.”)

²²⁴ Dark Catt, The Spokesman-Review Article, 4/30/2020 (DarkCatt_0000167–177, at DarkCatt_0000167–68).

For additional examples, see:

Gameopedia, “Digitisation: How It’s Changing the Landscape of Video Games, 10/18/2021, <https://www.gameopedia.com/digitisation-of-video-games/>. (The article lists “[c]onvenience and ease of access” as an advantage of digital distribution and states: “If you wanted a game ten to fifteen years ago, you would have to visit a physical store, find a copy of the game, and buy it. There were several possible problems, ranging from damaged discs to the game simply being out of stock, as well as the time taken to track down and buy the game. It is also less convenient to store and transport these discs– this is an added cost to the retailer. In today’s digital era, digital games can be bought online by customers with just a few clicks. These platforms also hold a huge variety of games, far more than most physical stores can stock.”)

- (76) Valve also does not see brick-and-mortar retail distribution as a reasonable economic substitute for developers. Scott Lynch, Valve's COO, testified that, for publishers, there are many features and costs that differentiate traditional brick-and-mortar distribution from online distribution:²²⁵

Well, there's -- there's lots of [differences]. There -- for one, you know, packaged goods distribution is limited in terms of shelf space because, you know, they're physical items that take up space. You have to put the game on a piece of plastic, CD-ROM, DVD, and then you've got to put it in a box and make it in a factory. And then you have to ship those boxes to all over the world. Eventually they have to get onto store shelves. Then you have to kind of make sure those store shelves are kind of organized and they're doing a good job in terms of presentation. You have to worry about the inventory kind of being there in all the different stores when people go there and being out of inventory.

Returns are much more costly because packaged goods are costly. You have to go through this complicated sales process with the retailer and, you know, figure out how many you'll sell in, what happens if they don't sell through. You know, then -- you know, typically in the stores you have to do some retail marketing, point of presence kind of stuff.

You know, when a game ships out at retail in a piece of plastic, if there's, you know, a problem with how the game was duplicated on the CD, that can be super costly trying to solve that problem. Doing updates, it's typically quite a period of time.

And then in terms of, you know, lining all those things up at retail for the developer, you know, you've really kind of got to hit a ship date. So it's pretty stressful on the teams trying to get to a ship date once you align all those things.

- (77) Thus, digital third-party PC game distribution platforms are differentiated from physical third-party distribution for both publishers and users. PC game sales through brick-and-mortar retail have nearly fully stopped, and this distribution/purchase channel is increasingly insignificant in the marketplace.²²⁶ As such, I conclude that physical third-party distribution

GameSync Website, Game Distribution – Physical or Digital?, <https://gamesync.consulting/game-distribution-physical-or-digital/> (accessed 11/9/2023). ("Digital distribution" is a convenient and increasingly popular method of supplying video games to the public. Companies like Valve and EA both famously use Steam and Origin, respectively, to provide gamers access to a (ever-expanding) plethora of titles right at their fingertips.")

²²⁵ Scott Lynch, Dep. Tr., 10/12/2023, at 35:19–36:24.

²²⁶ VentureBeat, "Traditional Gaming Shrinks to 26.7% of Game and Esports Revenue as Overall U.S. Sales Head to \$72B by 2027 | PwC," 6/18/2023, <https://venturebeat.com/games/u-s-game-and-esports-revenue-to-grow-from-54-1b-to-72b-by-2027-pwc/>. (See "Physical PC games sell-through (\$ mn)" line item; it is forecasted to reach \$0 million in 2025.)

is not sufficiently substitutable for publishers to include physical third-party distribution services in the relevant market.

First-party digital PC game distribution

- (78) Another potential path for publishers is to self-distribute by developing their own first-party distribution platform.
- (79) Developing a distribution platform is costly. According to Dr. Rietveld, “building and maintaining a self-distribution platform to become fully integrated requires significant scale and financial wherewithal that most mid-sized publishers likely do not possess, and small publishers definitely do not possess.”²²⁷ Unsurprisingly, publishers who have created first-party digital PC game distribution platforms are predominantly large and have the resources and popularity to support their own platform.
- (80) Even if a publisher can overcome the cost barrier, it is difficult for a *single* publisher to entice gamers to move to a standalone platform and likely impossible, as a practical matter, for multiple game publishers to accomplish that, especially in the presence of Valve’s conduct. Users want access to the platforms that have the most games and other users.²²⁸ Those publishers who have attempted to launch first-party distribution platforms have generally been unsuccessful. For example, some platforms have struggled due to lack of users or limited content available for users to consume. For example, Bethesda “[gave] up on the idea of having its own launcher to compete with the likes of Steam and Epic Games. While those two can offer gamers hundreds if not thousands of titles to choose from, Bethesda’s own games

Screen Rant, “You’re Not Buying Video Games, You’re Buying IOUs,” 11/13/2022, <https://screenrant.com/video-game-physical-disc-validation-key-digital-download/>. (“For PC gaming fans, the switch to digital purchases is more universal, as storefronts like Steam have almost entirely replaced physical PC disc sales.”)

For example, when discussing UK physical retail gaming pricing, Valve remarked that “UK retail stores are no longer much of a problem,” and Valve employee, DJ Powers, elaborated on this statement in his deposition, stating that “[g]radually over time retail sales of boxed products for PC became less and less significant.” This demonstrates that physical PC game stores are not Steam’s competitors. See:

Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–90, at VALVE_ANT_0053489), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45.

DJ Powers, Dep. Tr., 9/28/2023, at 126:13–21. (“Q. This email says, ‘UK retail stores are no longer much of a problem.’ Do you recall when that changed? A. Gradually over time retail sales of boxed products for PC became less and less significant. Q. For example, because people were buying games, they were times when people were buying games on physical media like a CD? A. Yeah.”)

²²⁷ Rietveld Report, 2/8/2024, §XII.B.

Also: Interview with John Robb, 2/5/2024.

²²⁸ For example: Interview with John Robb, 2/5/2024.

cannot compete with such numbers, leading to the publisher announcing that it would shut down its launcher.”²²⁹

- (81) Several publishers operate platforms to distribute single games, such as Roblox (*Roblox*) and Mojang Studios (*Minecraft*). While these are first-party platforms (or self-publishing), these platforms differ from typical first-party platforms because both *Roblox* and *Minecraft* encourage the creation of in-game content by users to be consumed by other users. *Roblox* allows users that develop in-game content to offer it for sale to other users via its Marketplace.²³⁰ *Minecraft* similarly allows users that develop in-game content to offer it for sale to other users via the *Minecraft* DLC Marketplace.²³¹ The interaction of users on these platforms thus differs from other first-party digital PC game distribution platforms. The emphasis that both *Roblox* and *Minecraft* place on user-generated content means the two games effectively operate as platforms, but with a multi-side component in its facilitation of transactions between game players. As such, it is most closely related to first-party distribution, but is even further removed in its substitutability because of its user experience.
- (82) First-party distribution platforms, as an alternative to distribution through the Steam platform, have been largely unsuccessful as a strategy. Publishers who started their own first-party distribution platform, such as Ubisoft and Activision Blizzard, have ultimately gone back to distributing their games on Steam *alongside* their own platform because of Steam’s market power. Valve has “a sticky platform with mature, engaged users.”²³² Ubisoft returned to Steam

²²⁹ Game Rant, “Bethesda Launcher Gets Official Shut Down Date,” 4/25/2022, <https://gamerant.com/bethesda-launcher-gets-official-shut-down-date/>.

A launcher is downloaded through a platform’s website and allows users to download and play games offered by the platform. See, for example:

Medium, “Let’s Talk About Game Launchers and Storefronts,” 7/18/2022, <https://medium.com/technology-hits/lets-talk-about-game-launchers-and-storefronts-b188dbba0834>. (“A game launcher or storefront is the primary method of downloading and playing games on the PC platform.”)

Game Rant, “Bethesda Launcher Gets Official Shut Down Date,” 4/25/2022, <https://gamerant.com/bethesda-launcher-gets-official-shut-down-date/>. (“Announced back in 2016, Bethesda’s game launcher allowed fans to skip the third-party companies like Steam and play Bethesda games straight from Bethesda.net.”)

²³⁰ Roblox Website, Marketplace, <https://www.roblox.com/catalog> (accessed 2/4/2024).

VentureBeat, “Roblox Believes User-Generated Content Will Bring Us the Metaverse,” 5/2/2020, <https://venturebeat.com/business/roblox-believes-user-generated-content-will-bring-us-the-metaverse/>. (Roblox “has unique content in the form of user-created goods that are for sale in a marketplace. Creators can take that and create things that the rest of users can play.”)

²³¹ Minecraft Website, Marketplace, <https://www.minecraft.net/en-us/catalog> (accessed 2/4/2024).

²³² Valve, Emails Regarding ██████████, 9/14/2020–9/15/2020 (VALVE_ANT_0897649–650, at VALVE_ANT_0897649).

in 2022 despite having described Steam’s business model and 30% commission as unrealistic and not reflective of “where the world is today in terms of game distribution[.]”²³³ When it returned to Steam, Ubisoft remarked that “we’re constantly evaluating how to bring our games to different audiences wherever they are, while providing a consistent player ecosystem through Ubisoft Connect[.]”²³⁴ In 2018, Activision Blizzard had removed its *Call of Duty* game from Steam and made it exclusive to its distribution platform Battle.net, but it reversed course in 2022 and released it back on Steam.²³⁵ In a post-trial filing in the matter of *Federal Trade Commission v. Microsoft Corp. and Activision Blizzard, Inc.* related to Microsoft’s proposed acquisition of Activision Blizzard, Microsoft said:²³⁶

Activision’s attempt to take PC digital sales of Call of Duty exclusive to its Battle.net platform was a resounding failure. Before 2018, Activision sold digital versions of PC Call of Duty titles on Valve’s successful Steam platform. In 2018, Activision decided to take the game off of Steam and make it exclusively available on Battle.net—largely in an effort to attract users to, and grow, Activision’s own platform. Battle.net’s monthly active users (“MAUs”) remained relatively flat during the period when it had exclusive access to digital sales of Call of Duty on PC, from 2018 through 2022. . . . Meanwhile, during that same period and without access to Call of Duty, Steam’s monthly active users grew by tens of millions of users, nearly doubling from 67 million MAUs in 2017 to 132 million MAUs in 2021.

- (83) Microsoft noted that “Steam, the leading PC game store, has risen in popularity during the period where it was without *Call of Duty*.”²³⁷ Microsoft’s recognition of Steam as the leading platform for PC games is consistent with its 2019 decision to release many of its PC games on

For example, Valve told ██████, which sells Steam keys for its games on its own store, that its game was selling much more on Steam compared to on its own store. See:

Valve, Emails Regarding Game Discount, 7/12/2012–7/14/2012 (VALVE_ANT_0372900–08, at VALVE_ANT_0372901–02, VALVE_ANT_0372908).

²³³ Ars Technica, “Ubisoft Comes Crawling Back to Steam After Years on Epic Games Store,” 11/22/2022, <https://arstechnica.com/gaming/2022/11/Ubisoft-comes-crawling-back-to-steam-after-years-on-epic-games-store/>.

²³⁴ Ars Technica, “Ubisoft Comes Crawling Back to Steam After Years on Epic Games Store,” 11/22/2022, <https://arstechnica.com/gaming/2022/11/Ubisoft-comes-crawling-back-to-steam-after-years-on-epic-games-store/>.

²³⁵ *FTC v. Microsoft Corp. and Activision Blizzard, Inc.*, No. 3:23-cv-02880-JSC, Post-Trial Findings of Fact and Conclusions of Law, at Proposed Findings of Fact ¶ 216 (N.D. Cal. 2023).

Eurogamer, “Five Years Later, Call of Duty Returns to Steam with Modern Warfare 2,” 6/8/2022, <https://www.eurogamer.net/five-years-later-call-of-duty-returns-to-steam-with-modern-warfare-2>.

²³⁶ *FTC v. Microsoft Corp. and Activision Blizzard, Inc.*, No. 3:23-cv-02880-JSC, Post-Trial Findings of Fact and Conclusions of Law, at Proposed Findings of Fact ¶ 216 (N.D. Cal. 2023) (emphasis added).

²³⁷ *FTC v. Microsoft Corp. and Activision Blizzard, Inc.*, No. 3:23-cv-02880-JSC, Post-Trial Findings of Fact and Conclusions of Law, at Proposed Conclusions of Law ¶ 86 (N.D. Cal. 2023).

Steam, despite having its own distribution platform, Microsoft Store.²³⁸ Similarly, Riot sells some of its games on Steam and EGS, while having its own distribution platform.²³⁹ A reasonable economic inference is that first-party distribution is not a feasible standalone substitute for third-party digital PC game platforms. See Section 6.2 for further discussion of distribution platforms’ return to Steam.

²³⁸ Microsoft, “Our Approach to PC Gaming,” 5/30/2019, <https://news.xbox.com/en-us/2019/05/30/microsoft-approach-to-pc-gaming/>.

As another example, Bethesda decided in 2018 to launch the game *Fallout 76* exclusively on its own distribution platform Bethesda.net. See:

IGN, “Bethesda Says Fallout 76 Avoiding Steam Doesn’t Mean All Future Games Will Too, Doom Eternal Undecided,” 8/11/2018, <https://www.ign.com/articles/2018/08/11/bethesda-says-fallout-76-avoiding-steam-doesnt-mean-all-future-games-will-too-doom-eternal-undecided>.

In an internal email, Valve noted that Triple-A publishers are going on their own and met with [REDACTED]

See:

Valve, Emails Regarding [REDACTED], 8/7/2018–8/9/2018 (VALVE_ANT_0703915–933, at VALVE_ANT_0703917).

However, as discussed above, not only did Bethesda transfer its games to Steam, but it also fully shut down its Bethesda.net distribution platform in 2022. See:

Bethesda, “Sunsetting the Bethesda.net Launcher & Migrating to Steam,” 4/27/2022, <https://bethesda.net/en/article/2RXxG1y000NWupPalzLbIG/sunsetting-the-bethesda-net-launcher-and-migrating-to-steam>.

See also: DJ Powers, Dep. Tr., 9/29/2023, 154:11–20. (“Q. So back in this time period 2018, Valve was trying to convince [REDACTED] it’s better not to go on your own and for its most recent Triple-A title today [REDACTED] released on Steam at the same time as its own platform [REDACTED]? A. It is true that their most recent title released on Steam day and date.”)

²³⁹ Epic Games Store, “Riot Games Brings League of Legends, VALORANT, and More to the Epic Games Store,” 11/4/2021, <https://store.epicgames.com/en-US/news/riot-games-brings-league-of-legends-valorant-and-more-to-epic-games-store>. (“Downloading any of the free-to-play games will install the new Riot Client, with direct access to those titles.”)

Riot Games, “New Riot Client Coming Soon,” 9/16/2021, <https://www.riotgames.com/en/news/new-riot-client-coming-soon>. (“All desktop Riot games will be accessible from one client, with each game having its own dedicated product page with game-specific content including the latest news and events. You’ll be able to clean up your desktop and only have one Riot Client launcher where all your favorite Riot games will live! However, if you prefer, you can maintain your existing game desktop shortcuts for a direct path to your favorite game.”)

Riot Games, “Riot Client Game Hubs,” 10/9/2023, <https://www.riotgames.com/en/news/riot-client-game-hubs>.

Editions of Riot’s *League of Legends* are sold on Steam, and such editions are developed by other publishers Riot has contracted. See, for example:

Steam, Riot Forge LOL Games, <https://store.steampowered.com/search/?publisher=Riot%20Forge> (accessed 1/17/2024).

Steam, Hextech Mayhem: a League of Legends Story, https://store.steampowered.com/app/1651960/Hextech_Mayhem_A_League_of_Legends_Story/ (accessed 1/17/2024). (“© 2021 Riot Games, Inc. RIOT FORGE, HEXTECH MAYHEM: A LEAGUE OF LEGENDS STORY and any associated logos are trademarks, service marks, and/or registered trademarks of Riot Games, Inc. Developed by Gaijin Games, Inc., d/b/a Choice Provisions.”)

Steam, Ruined King: a League of Legends Story, https://store.steampowered.com/app/1276790/Ruined_King_A_League_of_Legends_Story/ (accessed 1/17/2024).

Ruined King is highlighted on Riot Games’ website. See:

Riot Games Website, Home, <https://www.riotgames.com/en> (accessed 2/5/2024).

- (84) In addition, Valve’s internal documents show that publishers that leave Steam have historically done so because of short-term opportunities, such as advance payments and exclusives, and eventually return to Steam. For example, in 2019 *Metro Exodus*’ publisher was leaving Steam because of exclusivity.²⁴⁰ When the publisher notified Valve that it was leaving Steam, it offered to return the game to Steam a year later, and Valve responded that “[w]e want to get Metro Exodus back on Steam, ██████████ ██████████”²⁴¹ In its 2019 business recap, Valve noted that “[f]irst EGS exclusives are returning to Steam[.]”²⁴² Steam Business Team member Tom Giardino testified that there are many developers that leave Steam to take advantage of Epic exclusives and then return to Steam after their exclusivity deals end.²⁴³
- (85) I have not seen evidence that Valve regards these first-party distribution platforms as meaningfully competitive threats. This suggests that Valve does not see them as substitutes.²⁴⁴ In fact, internal Valve documents do not portray these first-party distribution platforms as vigorous competitive threats. Rather, if anything, they show non-competitive and collaborative relationships/partnerships with these platforms.²⁴⁵ For example, after

²⁴⁰ Valve, Emails Regarding Metro Exodus, 1/24/2019–1/25/2019 (VALVE_ANT_2807660–665, at VALVE_ANT_2807665).

²⁴¹ Valve, Emails Regarding Metro Exodus, 1/24/2019–1/25/2019 (VALVE_ANT_2807660–665, at VALVE_ANT_2807664–665).

²⁴² Valve, “Steam: Steam Biz – 2019 Recap,” 2/24/2020 (VALVE_ANT_2370759–762, at VALVE_ANT_2370759).

²⁴³ Tom Giardino, Dep. Tr., 11/2/2023, at 287:9–18. (“Q. Okay. Now, Mr. Giardino, are you aware of instances where developers decided to go exclusive to Epic Games Store -- Epic Games Store but then eventually came back to Steam? A. Yes. I am. Q. Okay. And in your experience, why was that? A. As far as I can recall, I think there’s probably hundreds of games that have done that at this point. And I’m not sure what their different decision-making processes would look like.”)

For additional examples, see:

Valve, Competitive Landscape Analysis, undated (VALVE_ANT_1221442–444, at VALVE_ANT_1221443). (“[W]e’re also seeing some of the partners who wanted to run these experiments now coming back [to Steam] enthusiastically (most notably ██████████, and a handful of the early Epic Store exclusives).”)

Valve, Emails Regarding Publishing on Steam, 2/17/2021–2/18/2021 (VALVE_ANT_0624130–132, at VALVE_ANT_0624130–131). (“[I]t’s fine to release a game on Steam that has already come out somewhere else, and that’s actually a pretty big part of our business since some games do exclusive deals, or come back to Steam after launching elsewhere, etc. (So, stuff like all ██████████ titles coming back to Steam, or a game that was Epic-exclusive for 6 months, or whatever the case may be).”)

²⁴⁴ Note that while first-party distribution platforms are not competitive threats to Steam, publishers that own such platforms and publish content on Steam are still subject to Valve’s PMFN Policy, as are other Steam publishers that publish their games anywhere else (e.g., retail). This is because Valve’s PMFN Policy is more broadly encompassing than just direct competitors in the relevant market and covers anywhere, wherein Steam publishers sell games. See Section 5.1 for detailed discussion of Valve’s PMFN.

²⁴⁵ For additional examples, see:

Valve, Steam Presentation, c. 2014 (VALVE_ANT_1221398.pptx, at slides 3, 18). (The Valve presentation regarding “█████████ on Steam” presents a graph of “█████████ as a percentage of the Steam platform” in terms of revenue and

meeting with ██████████, Valve noted that “██████████ is prepping to ship ██████████ ██████████ and we were very surprised they took our meeting. . . . ██████████ mentioned to us that Valve (Steam) is ██████████ #1 single partner as of this year.”²⁴⁶ In an email regarding a meeting with ██████████ (and other publishers), Valve refers to ██████████ as one of its “partners.”²⁴⁷ A 2021 Valve presentation covering ██████████ performance on Steam asks ██████████ to “[p]ut your next big release on Steam so that you can capitalize on the massive reach and growth of our platform without giving up your close relationship with your customers.”²⁴⁸

- (86) In sum, the vast majority of publishers choose not to engage in first-party distribution. Few attempts have been made, and very few, if any, of those publisher-launched first-party distribution platforms are successful, much less a competitive threat to Steam. The expense and user reach issues on the publisher side, as well as the user experience on the gamer side, suggest that this is not a feasible substitute; instead, at best and supported by the evidence, this distribution is complementary to third-party digital PC game distribution via platforms.²⁴⁹

makes the following comment regarding ██████████ game: “Free to Play with micro-transactions would solve user fragmentation and appeal to a wide audience on Steam[.]”

Valve, Emails Regarding Revenue Share, 9/26/2018 (VALVE_ANT_1702737–739, at VALVE_ANT_1702737). (In response to potential changes to revenue share, a Valve employee stated that “[we w]ould love to show up at ██████████ in November with a ‘bring us ██████████’ pitch.”)

Valve, Emails Regarding ██████████ Visit, 1/25/2019–1/28/2019 (VALVE_ANT_0467616–617, at VALVE_ANT_0467616). (During a business trip, a Valve team “visited the ██████████ office and presented to members of their strategy and business team. Last year they’d visited us to talk about ██████████ [game] as they shopped the title around. While we had a sales pitch prepared, we started out with a ██████████ focused Steam update and the new feature slides. Lots of interesting questions and interest in streaming and using the custom emails for ██████████.”)

²⁴⁶ Valve, Emails Regarding ██████████, 9/12/2013–9/13/2013 (VALVE_ANT_0164882–884, at VALVE_ANT_0164882).

²⁴⁷ Valve, Emails Regarding Publisher Visit, 1/27/2019–2/11/2019 (VALVE_ANT_0471786–789, at VALVE_ANT_0471786).

²⁴⁸ Valve, ██████████ Presentation, 4/16/2021 (VALVE_ANT_1817158–190, at VALVE_ANT_1817158–170, VALVE_ANT_1817187).

²⁴⁹ Similarly, a publisher could consider self-publishing via the web rather than building an entirely new platform. This self-publishing is less difficult than building a platform, and thus is more accessible to smaller publishers. However, for both publishers and users, this is not a sufficiently comparable method for distribution. For publishers, access to users is uncertain, at best, when publishing without a platform. See for example:

Game Gunk Website, Do Developers Need a Website to Host Their Own Games?, <https://game-gunk.com/do-you-need-a-website-to-host-your-own-game/> (accessed 2/4/2024). (“If you are hoping to obtain as many sales as possible or create a commercial venture with your indie game, you’re better off putting your game on exchanges such as Steam, GOG, or Itch.io in order to get the most amount of players to see and play and your game. . . . [I]t is not mandatory or advisable just to have your game hosted on your own website. Unless you have lofty expectations to create your own platform such as Steam or GOG.” “But for most, do not expect your website to encourage thousands of downloads or sales. Especially if you are an independent creator.”; “Leave it solely to your [own] website to market and distribute your game – [you] may end in a low amount of downloads. Especially if you are a start-up with a new game and a small website. People do not like to download games from an unknown source[.]”)

PC Gamer, “Is it Worth Cutting Out Steam to Sell Indie Games Direct?,” 3/7/2018, <https://www.pcgamer.com/is-it-worth-cutting-out-steam-to-sell-indie-games-direct/>. (“Selling from a custom website means a developer has to build all the infrastructure around the game from the ground up: Rohrer runs multiple servers, sets up automatic game updates and

PC game subscriptions

- (87) Publishers may also consider distributing their games through a PC game subscription model. A subscription model allows gamers to pay a flat monthly or yearly fee to play any game in a library of games.²⁵⁰
- (88) The services provided by PC game subscriptions and third-party distributors are distinct, and these distribution channels are likely not to be interchangeable for users and/or publishers. An internal Valve document emphasizes this point, stating that Game Pass, Microsoft’s subscription offering, is “fully differentiated from Steam and EGS, they’re doing something no one else is[.]”²⁵¹ As described below, the PC game subscription business model attracts a different user base and offers distribution for a limited set of developers compared to third-party PC game distributors.

created a user review system himself.”; “However, for some developers the extra audience that Steam can offer (18 million concurrent users and counting) has become a necessity in order to survive. Hecker says that he’s simply not making enough money selling SpyParty directly. . . ‘it’s very hard to not go on Steam and make a commercially viable game.’”; “Currently, without much fanfare, the game is selling anywhere between two and 20 copies a day through the website.”; “Another developer that, like Hecker, is keen on the direct sales model but isn’t ready to rely on it is Adam Saltsman. . . ‘we talked to a bunch of studios that did their own direct sales setup, but it was pretty intimidating.’”)

Game Developer, “6 Alternatives to Steam for Indie Developers,” 4/24/2017, <https://www.gamedeveloper.com/business/6-alternatives-to-steam-for-indie-developers>. (“[Y]ou could sell your game on your own website, although unless you have a very big and engaged community, we recommend you not to rely solely on this.”)

Interview with David Rosen, 2/1/2024.

Users lose the ability to reach multiple publishers or interact with their friends like they would through a platform. Similarly, users have a hard time discovering these self-published games on publishers’ own websites, as demonstrated by such websites’ traffic, suggesting that most users keep their search limited to popular platforms they are on. See for example:

Game Gunk Website, Do Developers Need a Website to Host Their Own Games?, <https://game-gunk.com/do-you-need-a-website-to-host-your-own-game/> (accessed 2/4/2024). (“Most people prefer to download games and executable files from established sources [such as Steam and Itch.io]. Not small independent websites.” “Bearing in mind that publishing your game to your own website may not offer the same level of traffic that bigger platforms can.”)

PC Gamer, “Is it Worth Cutting Out Steam to Sell Indie Games Direct?,” 3/7/2018, <https://www.pcgamer.com/is-it-worth-cutting-out-steam-to-sell-indie-games-direct/>. (“People like to buy games on Steam. It’s a very trusted storefront, whereas if you go to SpyParty.com you’re clicking a link on a website and entering your credit card number. So I can totally empathize with people holding off until it’s on Steam.”)

Interview with John Robb, 2/5/2024.

As such, self-publishing via the web is not an economically feasible substitute to distributing via platforms.

²⁵⁰ See, for example:

EA Website, EA Play, <https://www.ea.com/ea-play> (accessed 2/5/2024).

Microsoft Website, PC Game Pass, <https://www.xbox.com/en-US/xbox-game-pass/pc-game-pass> (accessed 10/23/2023).

²⁵¹ Valve, “GDC 2020 – Competitor Analysis,” 2020, (VALVE_ANT_0019400–02, at VALVE_ANT_0019401), available at Scott Lynch, Dep. Tr., 10/13/2023, Exhibit 156.

- (89) The purchase of a game subscription involves different financial and gameplay considerations than the purchase of individual PC games.²⁵² For example, purchasing a game subscription allows users to rent games for a period of time as opposed to owning them. Users must make regular payments to distributors instead of a one-time payment. For example, a 2021 Valve analysis states that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]²⁵³
- (90) Articles discussing gaming subscriptions also highlight these differences. Documents produced by Valve and others describe these additional considerations. A 2020 McKinsey article indicates that game subscriptions are not aligned with consumer behavior: “[G]amers, unlike consumers of video content, are less likely to sample lots of different titles, focusing instead on just one or two titles for weeks or months at a time.”²⁵⁴ A 2022 GamesIndustry.Biz article states: “[T]here’s the reality that, for a lot of people who only play a handful of games a year, a subscription service just doesn’t make much sense.”²⁵⁵
- (91) In the context of [REDACTED], a Valve document claims that [REDACTED] offers a subscription of [REDACTED] games to loyal users while [REDACTED] has “[bought] up a huge chunk of the back

²⁵² See, for example: Valve, Platform Comparison, undated (VALVE_ANT_1193209–224, at VALVE_ANT_1193218). (The document produced by Valve states: “[W]ith the subscription service on top of the play per game service[,] it feels as though [REDACTED] has found a good way of getting more money from users. Having money at the forefront of the service can be great for people who are on a budget or looking to only spend a certain amount[.]”)

²⁵³ Valve, “2021 Competitor Analysis,” 2021 (VALVE_ANT_0019716–18, at VALVE_ANT_0019718).

For additional examples, see:

Valve, Valve’s Statement on Activision/Blizzard Acquisition, 5/12/2022 (VALVE_ANT_2711018–022, at VALVE_ANT_2711020). (The Valve document states: “[O]ne difference between Game-Pass-like subscriptions and sales of games on Steam is that Game Pass offers only temporary access to video games (for the duration of the subscription).”)

Valve, “New User Experience – Initial Data,” undated (VALVE_ANT_0801131–147, at VALVE_ANT_0801141). (The document produced by Valve states: “[REDACTED] points a lot to the [REDACTED] feature for [REDACTED], games can be purchased through the [REDACTED], but they make a point of labelling every game that is available through the [REDACTED] subscription. This then runs into the same issue particularly for young users where a lower up-front cost with subscription is intriguing but if the subscription ever ends then progress and game access are lost. Users and developers must balance the cost and emotion tied to purchase.”)

²⁵⁴ McKinsey, “The Netflix of Gaming? Why Subscription Video-Game Services Face An Uphill Battle,” 7/8/2020, https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-netflix-of-gaming-why-subscription-video-game-services-face-an-uphill-battle#.

²⁵⁵ Games Industry.Biz, “Xbox Changes Its Tone on Game Pass,” 11/2/2022, <https://www.gamesindustry.biz/xbox-changes-its-tone-on-game-pass>.

the number of games between subscriptions and third-party digital PC game distributors, indicating that subscription models provide distribution for a limited number of developers. As of early 2024, there were approximately 90,000 games on Steam.²⁶⁰ In contrast, Game Pass offers 428 games and EA Play offered on Origin has 95 games.²⁶¹ Therefore, while it is possible for subscriptions to offer distribution services that benefit developers, such as indie developers, the opportunities are still limited compared to third-party digital PC game distributors.

- (93) Valve documents also demonstrate that distribution through subscriptions is not widely accessible to developers. For example, several online sources describe that subscriptions provide a “curated” library.²⁶² According to Valve, having a curated strategy “means less clutter, ideally driven by quality, but it cuts out a number of titles and developers. That lowers the chance of seeing ‘surprise hits’ for customers and lowers the chances for [start-up] success

Microsoft reports that over the last four years, indie developers have seen their revenue almost double thanks to engagement from Game Pass.’ (Variety)”)

Variety, “Ahead of E3 Showcase, Microsoft Reaffirms Its Commitment to Bulking Up Xbox Game Pass,” 6/10/2021, <https://variety.com/2021/digital/news/xbox-game-pass-microsoft-e3-1234993103/>. (“Microsoft reports that over the last four years, indie developers have seen their revenue almost double thanks to engagement from Game Pass.”)

²⁶⁰ Steam Website, Titles on Steam, <https://store.steampowered.com/search/?category1=998&os=win%2Cmac%2Clinux&supportedlang=58english&ndl=1> (accessed 2/1/2024).

²⁶¹ PC Gaming Wiki Website, List of PC Game Pass Games, https://www.pcgamingwiki.com/wiki/List_of_PC_Game_Pass_games (accessed 2/6/2024).

PC Gaming Wiki Website, List of EA Play Games, https://www.pcgamingwiki.com/wiki/List_of_EA_Play_games (accessed 2/6/2024).

EA also offers the EA Play Pro subscription on Origin. Even though this subscription offers more games than EA Play at 153 games as of February 2024, this subscription also does not provide the widespread distribution offered by third-party distributors. See:

EA Website, EA Play, <https://www.ea.com/ea-play> (accessed 2/5/2024).

PC Gaming Wiki Website, List of EA Play Games, https://www.pcgamingwiki.com/wiki/List_of_EA_Play_games (accessed 2/6/2024).

²⁶² Xbox, “E3 2019: How to Experience Xbox Game Pass for PC,” 6/9/2019, <https://news.xbox.com/en-us/2019/06/09/how-to-experience-xbox-game-pass-for-pc/>. (“As part of our commitment to bring more choice to the PC gaming community, we’re excited to announce that starting today, PC gamers can join the recently-announced Xbox Game Pass for PC (Beta) and explore a curated, growing library of over 100 high-quality PC games on Windows 10.”)

Screen Rant, “EA Play Subscription Service Coming to Steam in August,” 8/19/2020, <https://screenrant.com/ea-play-subscription-steam-august-launch/>. (“EA Play, EA’s video game subscription service, is coming out on Steam on August 31st, offering Steam users access to several curated EA titles.”)

among aspiring developers.”²⁶³ In comparison, Valve claims that Steam’s “open” model “means every title gets a chance and ‘surprise hits’ are bound to happen.”²⁶⁴

- (94) Gaming subscription models also do not support the variety of monetization strategies available to developers with third-party digital PC game distribution platforms. For example, with a flat monthly or yearly fee, subscription models do not permit ongoing game monetization.²⁶⁵ Further, a Valve document discussing [REDACTED] recognizes that not all monetization models are compatible with subscriptions, stating that [REDACTED]

[REDACTED]

[REDACTED]”²⁶⁶ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] One author notes that “[f]ree-to-play games, by definition, don’t make sense behind a subscription paywall, especially on PCs and mobile” and that, “[t]o succeed, a gaming subscription would therefore need to offer access to otherwise-premium (paid) games[.]”²⁶⁸ With more flexibility relating to game monetization, third-party distributors can provide developers with a wider range of revenue-generating opportunities compared to subscription models.

- (95) Publishers with games compatible with subscription models often decide to offer games both through a game subscription and for individual purchase on a third-party digital PC game

²⁶³ Valve, “Evolving Steam,” undated (VALVE_ANT_0054558–59, at VALVE_ANT_0054558).

²⁶⁴ Valve, “Evolving Steam,” undated (VALVE_ANT_0054558–59, at VALVE_ANT_0054558).

²⁶⁵ For example, many developers follow a so-called “freemium” model; such a model is impractical in a subscription setting where users would need to pay a higher subscription cost up front as payment for the option to adopt premium or in-game features.

²⁶⁶ Valve, “2021 Competitor Analysis,” 2021 (VALVE_ANT_0019716–18, at VALVE_ANT_0019718).

²⁶⁷ Valve, Valve’s Statement on Activision/Blizzard Acquisition, 5/12/2022 (VALVE_ANT_2711018–022, at VALVE_ANT_2711020).

²⁶⁸ McKinsey, “The Netflix of Gaming? Why Subscription Video-Game Services Face an Uphill Battle,” 7/8/2020, <https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-netflix-of-gaming-why-subscription-video-game-services-face-an-uphill-battle#/>.

This statement refers to free-to-play games that are not developed by the publisher who is offering the subscription. Developers of these games cannot be properly compensated through a subscription model. However, a publisher offering a subscription may put its own free-to-play games in the subscription to diversify the subscription catalog and because the publisher will be compensated through subscription sales. As an example, EA offers *The Sims 4*, a free-to-play game, in EA Play. See: Steam Website, Electronic Arts – Top Sellers, <https://store.steampowered.com/publisher/EA/> (accessed 11/10/2023).

distribution platform. For example, EA offers many of its “Top Sellers” on Steam both for individual purchase and through EA Play, its subscription service.²⁶⁹ As another example, many of the “Most popular” games included in Game Pass are also available for individual purchase on Steam.²⁷⁰ Valve is also considering offering additional subscription services on Steam, including Game Pass.²⁷¹ Publishers offering their games both for individual sale on third-party platforms and in a subscription, or even bringing subscription offerings to Steam directly, demonstrates that they view game subscriptions to be complements to third-party digital PC game distribution via platforms, rather than substitutes.²⁷²

²⁶⁹ Steam Website, Electronic Arts – Top Sellers, <https://store.steampowered.com/publisher/EA/> (accessed 11/10/2023). (For example, *Battlefield™ 2042*, *It Takes Two*, *Titanfall® 2*, *Plants vs. Zombies GOTY Edition*, and *Dead Space*, among others, are offered for individual sale and are included in EA Play, as designated by the EA Play logo.)

²⁷⁰ Xbox Website, PC Game Pass, <https://www.xbox.com/en-US/xbox-game-pass/games> (accessed 11/10/2023).

All 5 of the games listed in the first row on the Game Pass website are offered on Steam. See:

Steam Website, *Payday 3*, https://store.steampowered.com/app/1272080/PAYDAY_3/ (accessed 11/10/2023).

Steam Website, *Wartales*, <https://store.steampowered.com/app/1527950/Wartales/> (accessed 11/10/2023).

Steam Website, *Cities: Skylines II*, https://store.steampowered.com/app/949230/Cities_Skylines_II/ (accessed 11/10/2023).

Steam Website, *Headbangers: Rhythm Royale*,

https://store.steampowered.com/app/1761620/Headbangers_Rhythm_Royale/ (accessed 11/10/2023).

Steam Website, *Warhammer 40,000: Darktide*,

https://store.steampowered.com/app/1361210/Warhammer_40000_Darktide/ (accessed 11/10/2023).

²⁷¹ PC Gamer, “Valve Has No Plans For a ‘Steam Pass,’ But Would Help Microsoft Put Game Pass on Steam,” 2/25/2022, <https://www.pcgamer.com/valve-has-no-plans-for-a-steam-pass-but-would-help-microsoft-put-game-pass-on-steam/>. (“When I spoke to Valve president Gabe Newell about the Steam Deck last week, I asked him if Valve is interested in its own subscription service, or whether we could see Game Pass games on Steam in the future. ‘I don’t think it’s something that we think we need to do ourselves, building a subscription service at this time,’ Newell said. ‘But for their customers it’s clearly a popular option, and we’d be more than happy to work with them to get that on Steam.’”)

Valve, Developer Roundtable Questions, 2022 (VALVE_ANT_2711739–753, at VALVE_ANT_2711745). (“‘Is there a plan for Steam to have a subscription service? . . . Steam already has a subscription service available: EA Play[.] We’re open to other subscription plans as well, but it has to make sense for the partner, the players, and us[.]”)

²⁷² Valve agrees. For additional examples, see:

Valve, Emails Regarding Developer Views on Game Pass, 7/5/2019 (VALVE ANT 1613914–15, at VALVE ANT 1613914). (Emails between Valve employees state: [REDACTED])

Valve, Steam 2020 Year in Review, 2020 (VALVE_ANT_2711685–690, at VALVE_ANT_2711687). (“Steam has supported monthly subscriptions for individual games for a while now, but to support Electronic Arts bringing their catalog back to Steam, we’ve expanded on that functionality.”)

See, also:

Variety, “Ahead of E3 Showcase, Microsoft Reaffirms Its Commitment to Bulking Up Xbox Game Pass,” 6/10/2021, <https://variety.com/2021/digital/news/xbox-game-pass-microsoft-e3-1234993103/>. (“We’re seeing that yes, people are playing in Game Pass, but at the same time, a number of the games in Game Pass you’re seeing topping the charts in terms of digital sales as well,’ [Hamren] says. ‘Even for day-and-date games, we’re seeing that it just drives overall engagement with the game and drives players to the game.’”)

(96) Internal Valve documents and other sources also indicate that PC game subscriptions are not substitutes for third-party digital PC game distribution via platforms; rather, they are complementary to third-party PC distribution. For example, EA Play (formerly EA Access²⁷³) was brought to Steam in August 2020.²⁷⁴ A Valve email discussing the benefits of bringing EA Play to Steam states: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]²⁷⁵ A 2020 Valve presentation states that Valve worked to support the EA subscription service by developing “[a]ll new tools to support EA’s publisher subscription program, including time-limited promotions and store page presence.”²⁷⁶ The presentation further explains that with EA Play on Steam, EA would be able to advertise “[s]ubscription offers alongside the normal purchase options” on Steam.²⁷⁷ As another example, emails between Valve and [REDACTED] discussing bringing [REDACTED] to Steam state:

Eurogamer, “What Developers Think of Xbox Game Pass,” 7/6/2019, <https://www.eurogamer.net/xbox-game-pass-developers>. (“Microsoft has said, however, that it thinks subscription packages will continue to co-exist with other ways of selling games. ‘We don’t have a goal of being the subscription where you get all your content,’ head of gaming services Ben Decker told GI in response to the aforesaid editorial. ‘This is meant to be additive to the ecosystem. We don’t see a future where subscriptions are dominant. We see a future where customers have choice between a subscription and purchase-to-own, where there’s a mixed ecosystem because that’s what customers want, and that’s what developers want.’”)

Nintendo, “Microsoft Game Pass Analysis,” 6/4/2021 (NOA-VALVE-000294–97, at NOA-VALVE-000295). (An internal Nintendo analysis states: “Xbox Game Pass is functioning as a discovery engine right now, and while there might come a time when people realize en masse they don’t have to buy these titles at retail anymore, at least for now, Game Pass seems to be boosting sales across the board, rather than hindering them.”)

²⁷³ The Verge, “EA Play Subscription Service is Coming to Steam on August 31st,” 8/18/2020, <https://www.theverge.com/2020/8/18/21373983/ea-play-subscription-service-steam-release-date>. (“EA’s subscription service is coming to Steam very soon. Today, the publisher announced that the recently renamed EA Play will launch on Steam on August 31st. . . . Previously known as EA Access, the service gives subscribers the ability to play some of the publisher’s biggest titles[.]”)

²⁷⁴ The Verge, “EA Play Subscription Service is Coming to Steam on August 31st,” 8/18/2020, <https://www.theverge.com/2020/8/18/21373983/ea-play-subscription-service-steam-release-date>. (“EA’s subscription service is coming to Steam very soon. Today, the publisher announced that the recently renamed EA Play will launch on Steam on August 31st. . . . Previously known as EA Access, the service gives subscribers the ability to play some of the publisher’s biggest titles[.]”)

²⁷⁵ Valve, Emails Regarding EA Returning to Steam, 3/18/2015–3/26/2015 (VALVE_ANT_0293869–870, at VALVE_ANT_0293869).

²⁷⁶ Valve, Steam 2020 Update Presentation, 2020 (VALVE_ANT_1554250.pptx, at Slide 18).

²⁷⁷ Valve, Steam 2020 Update Presentation, 2020 (VALVE_ANT_1554250.pptx, at Slide 20).

The console market is fundamentally different because of the technology and software involved, game development, and consumer demographics.²⁸¹ Moreover, each generation of console has a fixed set of components, performance capabilities, and technical specifications.²⁸² Additionally, the major console hardware providers—Sony, Microsoft, and Nintendo—generally release new hardware only every few years (see Table 2 below). Thus, a developer of console games will generally be working with the same performance capabilities and limitations of a particular console for several years.

onto, you know, other modes, other means, you know. Q. And you needed money for that? A. Yes, it would require basically recreating and almost making a new game.”)

See, also: Merlyn Morgan-Graham, Dep. Tr., 11/15/2023, at 176:3–182:2.

²⁸¹ John Robb, Dep. Tr., 11/28/2023, at 108:4–19. (“Q. Did Dark Catt have plans to bring out versions of Djinni & Thaco that could be played on the PC platform? A. That was 100 percent the plan. Q. What about bringing out versions for other hardware platforms, such as -- and I'll just name some. Nintendo, Sony PlayStation, you know, Xbox. A. . . . That is fundamentally a different market. Q. How so? A. Because of the -- there's three different components: The technology behind it; the consumers and the demographics, who utilize that; as well as the development that goes into it.”)

Jacob Troyer, Dep. Tr., 11/27/2023, at 39:1–40:1. (“Q. Okay. And when you're designing a game, how do you make sure the game can run on a particular platform? A. Generally speaking, you check its -- you check the qualifications of the platform. . . . Q. So do you have to tailor your game software at least somewhat to fit each particular platform? A. Yes. Q. And what's hardware? A. Hardware is the electronics that you're playing on. So it's your computer. It's your console. It's your accessories that allow you to interact with that stuff. Q. And so when you're designing a game, do you make the game software compatible with a particular hardware? A. Yes, you will generally do that.”)

²⁸² Game Designing Website, Console vs PC Game Design (Pros and Cons of both), <https://www.gamedesigning.org/gaming/console-vs-pc/> (accessed 11/10/2023).

Magic Media Website, What to Know About Console Game Development, <https://magicmedia.studio/news-insights/what-to-know-about-console-game-development/> (accessed 11/10/2023).

As an example, a Best Buy article compares the performance capabilities and technical specifications of the Xbox One S, Xbox One X, and Xbox Series X. See:

Best Buy, Differences Between Xbox One And Xbox Series X|S, <https://www.bestbuy.com/discover-learn/differences-between-xbox-one-and-xbox-series-xs/pcmcat1687291558669> (accessed 2/5/2024).

Table 2: Major Console Hardware Releases Since 1994²⁸³

Nintendo	Sony	Microsoft
Nintendo 64 (1996)	PlayStation (1994)	Xbox (2001)
Nintendo GameCube (2001)	PlayStation 2 (2000)	Xbox 360 (2005)
Nintendo Wii (2006)	PlayStation 3 (2006)	Xbox One (2013)
Nintendo Wii U (2012)	PlayStation 4 (2013)	Xbox Series S/X (2020)
Nintendo Switch (2017)	PlayStation 5 (2020)	

(99) PCs used for games can be (and are) updated more frequently compared to the frequency of console releases. While the table above shows that major console hardware providers release consoles every four to eleven years, PC hardware “falls off the pinnacle of performance every 2 to 4 years” and gamers generally upgrade to a new system every two years.²⁸⁴ Further, there is considerably less standardization across consumers’ PCs used for gaming. Unlike video game consoles, PCs allow for customization to suit the user’s needs and facilitate incremental upgrades through replacing certain components such as the CPU, motherboard, GPU, RAM, storage, cooling systems, among others.²⁸⁵

²⁸³ Video Gamer, “List of PlayStation Console Generations Timeline and Models Released in Order (2023),” 10/25/2023, <https://www.videogamer.com/tech/console/playstation-console-generations/>.

Video Gamer, “List of Xbox Console Generations and Models Released in Order (2023),” 9/13/2023, <https://www.videogamer.com/guides/xbox-console-generations/>.

Video Gamer, “List of Nintendo Console Generations in Order, 10/31/2023, <https://www.videogamer.com/tech/nintendo/list-of-nintendo-console-generations-in-order/>.

Table excludes handheld consoles.

²⁸⁴ Apex, “How Often Should I Upgrade My Gaming PC?,” 4/8/2022, <https://apexgamingpcs.com/blogs/apex-support/how-often-to-upgrade-gaming-pc>.

Wired, “Everything You Need to Know Before Buying a Gaming PC,” 6/3/2020, <https://www.wired.com/story/gaming-pc-buying-tips/>. (“The pitch for playing demanding single-player games on a gaming PC is that you can update your hardware as game tech improves, although Intel’s Soqui says that, on average, gamers change in new systems every two years.”)

²⁸⁵ Apex, “How Often Should I Upgrade My Gaming PC?,” 4/8/2022, <https://apexgamingpcs.com/blogs/apex-support/how-often-to-upgrade-gaming-pc>.

Never Press Pause Website, How Often Do Gaming PCs Need an Upgrade?, <https://neverpresspause.com/how-often-do-gaming-pcs-need-an-upgrade/> (accessed 11/10/2023).

Best Buy Website, What to Know Before Buying a Gaming PC, <https://www.bestbuy.com/discover-learn/what-to-know-before-buying-a-gaming-pc/pcmcat1650298619690> (accessed 11/10/2023).

- (100) The wide variety of components available for gaming PCs allows for more flexibility in designing games. PC video game developers can take advantage of the latest performance capabilities,²⁸⁶ allowing them to offer a broader range of video game titles across genres on PCs compared to consoles. Recent consumer research conducted by YouGov in more than 20 countries demonstrates that “in most of [the surveyed] countries, PC gamers outnumber console gamers.”²⁸⁷
- (101) There is a significant discrepancy in content availability between consoles and PCs. For example, as of March 2023, there were over 67,000 games available on Steam.²⁸⁸ In contrast, there were around 12,000 games available on Nintendo Switch, 6,000 games on PlayStation 4 and 5 combined, and 3,000 on Xbox.²⁸⁹
- (102) Put simply, a PC video game developer may not be able to distribute via consoles. The major console providers—Sony, Microsoft, and Nintendo—serve as gatekeepers to their platforms in that their approval is required for a game to be available for play on their consoles.²⁹⁰ Although

²⁸⁶ A 2019 HP Tech Takes website post illustrates this point: “Today’s quick-moving games including first-person shooters (FPS), multiplayer games, open sandbox games, and more are built to reap advantages provided by the latest CPUs and their multi-cores and threads. In fact, they require them to play well. For instance, the first-person shooter multiplayer game *Call of Duty: Black Ops 4* recommends at least a quad-core processor: either the Intel i5-2500K, which has 4 cores and 4 threads, or AMD Ryzen R5 1600X, which has 6 cores and 12 threads. But for competitive players using high refresh-rate monitors (1080p), the game actually recommends an AMD Ryzen 1800X (an 8-core processor with 16 threads) or an Intel i7-8700K (which has 6 cores and 12 threads). The 8th Generation Intel i7-8700K happens to be one of fastest processors with some of the highest clock speeds (boost speed at 4.7 GHz) that Intel offers for gaming and streaming. Similarly, the acclaimed massively multiplayer online role-playing game (MMORPG) *World of Warcraft* recommends quad-core processors as well: Intel i7-4770 (4 cores, 8 threads) or AMD FX-8310 (8 cores, 8 threads) or better. The hugely popular online open-world game of *Grand Theft Auto V* recommends an Intel i5 3470 (4 cores, 4 threads) or AMD FX-8350 (8 cores, 8 threads). And the epic battle royale game of *Fortnite Battle Royale* recommends at least an Intel i5 2.8 GHz processor with 4 cores and 4 threads.” See:

HP, “GPU vs CPU: What Matters Most for PC Gaming?,” 2/24/2019, <https://www.hp.com/us-en/shop/tech-takes/gpu-vs-cpu-for-pc-gaming>.

²⁸⁷ YouGov, “Gaming and Esports: The Next Generation,” 2020, at 6. (“The wider uptake of PCs could be attributed to its sheer variety of games that appeal across a broader range of genres and demographics. It is a platform that at the higher end can service demanding, graphically-intensive titles such as *Red Dead Redemption II*, competitive team-based games such as *League of Legends*, and pre-installed mainstays such as *Solitaire* and *Minesweeper*.”)

²⁸⁸ Web Tribunal, “How Many Video Games Are There? 17 Playful Stats” 3/6/2023, <https://webtribunal.net/blog/how-many-video-games-are-there/>.

²⁸⁹ Web Tribunal, “How Many Video Games Are There? 17 Playful Stats” 3/6/2023, <https://webtribunal.net/blog/how-many-video-games-are-there/>.

²⁹⁰ Limpach, Odile (2020), *The Publishing Challenge for Independent Video Game Developers[:] A Practical Guide*, Boca Raton, FL: Taylor & Francis Group, at 72. (“The online console stores have always had strict approval processes for content. Microsoft and Sony were the first ones to open their stores to indie developers and grow their catalog of independent titles. With this generation of consoles, Nintendo has also recognized the advantage of working with independent developers to enrich and diversify their offer and, thus, expand their target group.”)

Interview with David Rosen, 2/1/2024.

console requirements have changed over time, this gatekeeping role can deter or prevent PC game developers from pursuing or accessing console distribution services. Even if a developer/publisher wants to develop a game for one/all of the consoles, that option may be foreclosed. To this point, the book *The Publishing Challenge for Independent Video Game Developers: A Practical Guide* states: “Alternatively, the indie games market on consoles is a lot less saturated than the PC market. Each console manufacturer has its own store and audience, with limited crossover. As developers, it is definitely more challenging to release on a console than to release on PC. With manufacturers being heavily involved in regulating content on these consoles, data availability is also limited.”²⁹¹ The author adds: “On the console market, first parties are still keeping their ecosystem quite closed with high barriers to entry. The access to development kits is more or less restricted and, in the case of Sony or Nintendo, pretty expensive.”^{292,293}

²⁹¹ Manzar, Imaad (2020), “An Overview of the Indie PC and Console Market,” in Odile Limpach, *The Publishing Challenge for Independent Video Game Developers[:] A Practical Guide*, Boca Raton, FL: Taylor & Francis Group, at 22.

²⁹² Limpach, Odile (2020), *The Publishing Challenge for Independent Video Game Developers[:] A Practical Guide*, Boca Raton, FL: Taylor & Francis Group, at 76.

²⁹³ For example, Sony Interactive Entertainment has three regional offices that manage, among other things, game distribution in those regions. Publishing a game with Sony for the PlayStation may require establishing a relationship with the office(s) corresponding to the geographic target(s) for the game. The various requirements and support levels can vary for each regional office, and the overall process with each can be time intensive. See:

Pingle Studio, “Standards of Game Platforms You Should Know Before Porting: Sony PlayStation,” 2/19/2021 (updated 5/2/2023), <https://pinglestudio.com/blog/porting/standards-of-game-platforms-you-should-know-before-porting-playstation>.

Additionally, each office operates autonomously, so approval by one office does not guarantee approval by another covering a different geographic area. See:

Pingle Studio, “Standards of Game Platforms You Should Know Before Porting: Sony PlayStation,” 2/19/2021 (updated 5/2/2023), <https://pinglestudio.com/blog/porting/standards-of-game-platforms-you-should-know-before-porting-playstation>.

Wired, “Opinion: Why Wii Shovelware Is a Good Thing,” 3/5/2008, <https://www.wired.com/2008/03/opinion-why-w-1/>.

Hill-Whittall, Richard (2015), *The Indie Game Developer Handbook*, Burlington, MA: Taylor & Francis Group, at PDF 104. (“In 2005, my studio signed a deal with a small US publisher to publish two of our games in North America on PS2 and PSP. The deal was negotiated by an agency on our behalf and was worth \$450,000 for us. This was huge—the games were complete, already released in PAL territories and ready to go into SCEA QA. And then, the kick in the teeth . . . Sony of America refused concept approval, and the deal was dead—no negotiation-finished.”)

Limpach, Odile (2020), *The Publishing Challenge for Independent Video Game Developers[:] A Practical Guide*, Boca Raton, FL: Taylor & Francis Group, at 56, 58–59.

The developer will also need access to a Sony PlayStation software development kit (“devkit”), and acquiring one directly from Sony requires applying to the Sony development program. As part of its review process, Sony also reviews the Game Design Document (“GDD”), which is a description of the game and may include information such as characters, story, theme, gameplay overview (goals, skills needed, mechanics, etc.), music and sound, art style, technical description, among others. Further steps for the developer may include confirming any third-party plugins used are supported by the console (if not, rewriting code may be required), validating that the game meets Sony’s Technical Requirements Checklist (could include a list of necessary technologies that must be incorporated, optimizing for the PlayStation hardware, Functional

- (103) Survey results demonstrate that a minority of video game consumers multihome between PCs and consoles. A 2019 report from Deloitte that summarizes the results of its “Digital Media Trends Survey” conducted from 2015 to 2018 describes “multiplatform players” as those that “[t]oggle between platforms and use multiple devices” and estimates that such players represent “23 percent of the gaming population.”²⁹⁴ “PC-dominant” players are estimated to represent “15 percent of the gaming population” and to spend approximately 1% of their time playing games on consoles; in comparison, “console-dominant” players are estimated to represent “23 percent of the gaming population” and spend less than 5% of their time playing games on PCs.²⁹⁵ A 2022 survey conducted by the Entertainment Software Association (“ESA”) regarding video game playing habits reported that only 23% of the approximately 4,000 survey participants responded that they play video games on both PCs and consoles.²⁹⁶ [REDACTED]
- (104) Moreover, consumers appear to have genre-specific preferences for playing games on PCs relative to consoles. In a 2021 ESA survey, the top game genre preferred among PC video game consumers was “Casual” (e.g., *Tetris*, *Solitaire*) while the top game genre preferred among console video game consumers was “Action” (e.g., *Grand Theft Auto*, *Super Mario Odyssey*).²⁹⁸ Similar results were found in a 2022 ESA survey.²⁹⁹ Additionally, monetization strategies can

Quality Assurance (“FQA”) checks, branding regulations, communication standards, and language policies), working with the Sony marketing team to create a platform page, and obtaining age ratings from the ESRB rating system. See:

Pingle Studio, “Standards of Game Platforms You Should Know Before Porting: Sony PlayStation,” 2/19/2021 (updated 5/2/2023), <https://pinglestudio.com/blog/porting/standards-of-game-platforms-you-should-know-before-porting-playstation>.

Game Developer, “How to Write a Game Design Document,” 7/26/2016, <https://www.gamedeveloper.com/business/how-to-write-a-game-design-document>.

²⁹⁴ Deloitte, “Digital Media Trends Survey,” 2019, at 3–4, available at: <https://www2.deloitte.com/us/en/insights/industry/technology/digital-media-trends-consumption-habits-survey/trends-in-gaming-esports.html>.

²⁹⁵ Deloitte, “Digital Media Trends Survey,” 2019, at 3–4, available at: <https://www2.deloitte.com/us/en/insights/industry/technology/digital-media-trends-consumption-habits-survey/trends-in-gaming-esports.html>.

²⁹⁶ ESA, “2022 Essential Facts About the Video Game Industry,” 6/2022, at PDF 2, 11.

²⁹⁷ Newzoo, “PC & Console Gaming Report,” 2023; at 44.

²⁹⁸ ESA, “2021 Essential Facts About the Video Game Industry,” 7/2021, at 7.

²⁹⁹ In 2022, “Puzzle” was the top genre among PC gamers and “Arcade” was the top genre among console gamers. See: ESA, “2022 Essential Facts About the Video Game Industry,” 6/2022, at 11.

differ across consumer bases. A 2023 Newzoo industry report shows that twelve of the top twenty “free-to-play” games released in 2022 were available on PC only,³⁰⁰ consistent with a free-to-play or freemium model being more successful among PC video game consumers than console video game consumers. Accordingly, a developer’s intended genre and monetization strategy may mean targeting audiences that are more represented on PCs than consoles (or vice versa), leading to limited substitutability across platforms.

- (105) Additionally, documents and testimony confirm that video game distribution services for consoles are not directly substitutable with video game distribution services for PC.³⁰¹ For example, an internal Valve email chain containing summary notes of a meeting with [REDACTED] demonstrates Valve’s belief that launching video games on PCs and consoles simultaneously will not negatively impact console sales: “We have spent a ton of time and energy over the past two years trying to convince [REDACTED] that shipping day and date on the PC won’t cannibalize their console sales.”³⁰² In 2017, a publisher told Valve it was unable to run a promotion of its game’s PC version on Steam because of an exclusive

³⁰⁰ Newzoo, “PC & Console Gaming Report,” 2023, at 28.

³⁰¹ For additional examples, see:

Epic, Diesel Q&As, c. 12/2018 (EPIC_VALVE_0000058–072, at EPIC_VALVE_0000062). (“Consoles are a different market [from the PC market], with dedicated game machines whose hardware costs are often partly subsidized by software revenue.”)

Valve, Emails Between [REDACTED] and Valve Employees, 9/11/2020–10/26/2020 (VALVE_ANT_1199870–889, at VALVE_ANT_1199885–86). (“We’re also keen to have the freedom to run independent sales promotions on both Xbox and Steam. They’re different audiences at — as already mentioned — very different stages of the product lifecycle.”)

Further examples in Valve testimony include:

Kristian Miller, Dep. Tr., 10/3/2023, at 55:1–18. [REDACTED]

Connor Malone, Dep. Tr., 11/8/2023, at 39:21–40:17. (“Q. Now, Steam distributes PC games, right? A. Yes. Q. So I can’t buy Mario Kart on Steam, correct? A. That is correct. Q. For Mario Kart, I’d have to buy a Nintendo console, right? A. Yes. Q. And similarly, I can’t buy a PC game on -- on a Nintendo Switch, right? A. As far as I know, you cannot buy a game on a Nintendo Switch and install it on a PC, if that’s what you’re asking. Q. Yeah. So I also couldn’t buy a PC game and then play it on the Switch, right? A. Correct. Q. In general, would you agree that games are generally sold for specific platforms? A. I don’t know if that’s always true, but I think there are hardware requirements that are typically a major component of games.”)

Scott Lynch, Dep. Tr., 10/13/2023, at 201:2–14. (“Q. Would it calculate its share of -- would it calculate how much revenue is sold of a particular game on the Windows operating system versus, let’s say, Xbox? A. Would it -- can you repeat the question? Q. Is Valve tracking -- Call of Duty is available on PC and -- and Xbox, right? A. Yes. [REDACTED]

³⁰² Valve, Emails Regarding [REDACTED] Meeting, 9/12/2013–9/13/2013 (VALVE_ANT_0164882–84, at VALVE_ANT_0164883).

promotion with ██████████ during that time.³⁰³ In response, Valve indicated that the PC and ██████████ versions are not in the same market, responding that “*[t]hese aren’t competitive products – they are for entirely different platforms, so no [sales] cannibalization as they are not selling PC games and we are not selling ██████████.*”³⁰⁴ Similarly, when Valve learned about exclusive console DLC content for ██████████ ██████████³⁰⁵ Further, emails between Valve and ██████████ discuss the potential sales benefits of launching games simultaneously on PC and on consoles, suggesting that sales on one platform need not be at the expense of the other.³⁰⁶

Mobile gaming

- (106) I also consider the possibility that distribution services for games played on mobile devices (e.g., iPhone, Samsung, etc.) are substitutes for PC-gaming distribution services. Based on the record evidence and my research and analysis, I conclude that game distribution through mobile app stores is not a substitute for digital PC game distribution platforms. In fact, PC and mobile games (and their associated distribution services) are complements.
- (107) PCs and mobile devices are used for different purposes by consumers, offer different gaming experiences, and serve different gaming audiences. Mobile devices are used “to perform various tasks on the go,” such as making phone calls, sending texts, “browsing the internet, checking emails, [and] playing games[.]”³⁰⁷ Games are used relatively minimally as compared to accessing the internet, communication by text, and the like. By contrast, PCs are used for more intensive tasks such as playing video games, “writing documents, editing videos, [and] creating applications[.]”³⁰⁸ PC gaming provides users with more control and customization

³⁰³ Valve, Emails Regarding Promotions, 2/2/2017–2/22/2017 (VALVE_ANT_1163340–43, at VALVE_ANT_1163340–41), available at Ricky Uy, Dep. Tr., 10/24/2023, Exhibit 173.

³⁰⁴ Valve, Emails Regarding Promotions, 2/2/2017–2/22/2017 (VALVE_ANT_1163340–43, at VALVE_ANT_1163340), available at Ricky Uy, Dep. Tr., 10/24/2023, Exhibit 173. (Emphasis added.)

³⁰⁵ Valve, Emails Regarding ██████████, 8/4/2020–8/5/2020 (VALVE_ANT_0897767–68, at VALVE_ANT_0897767), available at Ricky Uy, Dep. Tr., 10/24/2023, Exhibit 172.

³⁰⁶ Valve, Emails Between ██████████ Employees and Valve Employees, 1/28/2020–2/27/2020 (VALVE_ANT_0053218–228, at VALVE_ANT_0053226–28). (“[R]eleasing on Steam simultaneously with console (for example) shows that the game benefits ██████████. Furthermore, you can see strong correlation in the spikes between PC and console. Even in places where the *discount or player event is only applied on PC*, you see a spike not just in PC sales, but also in console sales at retail. That is because of network effects. If person A is a PC player and gets excited and talks about a game with friends B (██████████) and C (██████████), then B and C are still excited as long as they can also play the game on their platform of choice.”)

³⁰⁷ CellularNews, “What Is a Mobile Device,” 9/21/2023, <https://cellularnews.com/now-you-know/what-is-a-mobile-device/>.

³⁰⁸ Techopedia, “What Does Computer Mean,” 3/30/2020, <https://www.techopedia.com/definition/4607/computer>.

options than mobile gaming and “opens access to more complex games and genres[.]”³⁰⁹ Mobile gaming is preferred for “shorter gaming experiences.”³¹⁰ Many users prefer PC games because the games are “generally more challenging” and “tend to be much more immersive and complex than mobile games.”³¹¹ Users who play mobile games instead value convenience and portability, because “[y]ou can take them with you wherever you go and play them whenever you want.”³¹² While popular mobile games include *Candy Crush*, *Clash of Clans*, and *Angry Birds*, popular PC games are *GTA Series*, *Dota*, *Counter-Strike: Global Offensive*.³¹³ Ultimately, mobile and PC games “serve different sets of audiences” because “[m]obile games are designed to be played on smaller screens and with shorter gameplay sessions, while PC games are usually more complex and require a larger time commitment.”³¹⁴

- (108) Developers distinguish games developed for PC game distribution services from those developed for mobile ones. In GDC surveys, developers identify mobile (iOS and Android) and PC as separate platforms.³¹⁵ For example, in the 2023 GDC survey, 65% of developers developed games for PC platform while only 26% and 27% developed for iOS and Android, respectively.³¹⁶ Mobile and PC game development processes are different, in part, due to technical differences in hardware and software between PCs and mobile devices.³¹⁷ Developers

³⁰⁹ Suffolk Gazette, PC Gaming Vs Mobile Gaming in 2023: Expectations and Overview, <https://www.suffolkgazette.com/pc-gaming-vs-mobile-gaming-in-2023-expectations-and-overview/> (accessed 11/9/2023).

³¹⁰ Suffolk Gazette, PC Gaming Vs Mobile Gaming in 2023: Expectations and Overview, <https://www.suffolkgazette.com/pc-gaming-vs-mobile-gaming-in-2023-expectations-and-overview/> (accessed 11/9/2023).

³¹¹ PC ZONE, “PC Gaming Vs. Mobile Gaming: Which is Better?,” 8/30/2022, <https://www.pczone.co.uk/pc-gaming-vs-mobile-gaming-which-is-better/>.

³¹² PC ZONE, “PC Gaming Vs. Mobile Gaming: Which is Better?,” 8/30/2022, <https://www.pczone.co.uk/pc-gaming-vs-mobile-gaming-which-is-better/>.

³¹³ Juego Studio, “Difference Between Mobile and PC Game Development,” 9/5/2022, <https://www.juegostudio.com/blog/difference-between-mobile-and-pc-game-development>.

³¹⁴ Juego Studio, “Difference Between Mobile and PC Game Development,” 9/5/2022, <https://www.juegostudio.com/blog/difference-between-mobile-and-pc-game-development>.

See also: Valve, Emails Regarding Publishing on Steam, 9/28/2017–10/12/2017 (VALVE_ANT_0601404–409, at VALVE_ANT_0601407–408). (“My advice is to dedicate an entire day to looking at popular puzzle games on Steam (between the Puzzle, Indie, Casual, and Strategy tags) and looking at price, reviews, kind of content, etc. to get a sense of what does well and what doesn’t. Many casual puzzle games that do great on mobile do very little business on Steam, even if they’re super well made and well optimized for PC.”)

³¹⁵ See, for example:

GDC, “State of the Game Industry 2023,” 3/20/2023–3/24/2023, at 1, 5.

³¹⁶ GDC, “State of the Game Industry 2023,” 3/20/2023–3/24/2023, at 5.

³¹⁷ PCs have central processing units (“CPUs”) that use more electricity in high performance cases, have higher storage capacity, have ethernet capability, can “connect to a wide variety of monitors,” and “run more powerful software” relative

“need to create simpler games” for mobile devices than those for PC and have to design games within the constraints of mobile devices’ “limited storage space and processing power[.]”³¹⁸ PC game development is “not limited by hardware constraints[.]” so developers can “create more complex and visually stunning games[.]”³¹⁹ Developing PC games is a “more expensive and time-consuming process than mobile game development” because it requires powerful computers and specialized software, while “[m]obile games are typically less expensive to develop than PC games[.]”³²⁰

- (109) Valve’s internal documents reflect that games for PC distribution services are complements to those for mobile distribution services. Valve does not invest in mobile games because “[t]hat’s not in our scope—we are a PC gaming plat[form.]”³²¹ Indeed, in a 2021 letter brief in the matter of *Epic Games, Inc. v. Apple Inc.*, Valve made it clear that it does not make or sell “video games for mobile devices, or otherwise compete in the mobile market[.]” and “Steam users cannot buy or use mobile apps on Steam[;]” rather, “Steam [is] an online platform that lets users

to mobile devices. PCs’ operating systems are designed to use faster CPUs, larger amounts of disk space, higher amounts of random-access memory (“RAM”), and “the features of modern chipsets that are not available on most mobile devices.” Mobile devices have CPUs that cannot draw large amounts of electricity from mobile batteries, have smaller screens, lower storage capacity, and run less powerful software than PCs. Mobile operating systems (Android and iOS) are designed for specific devices and “have stricter hardware requirements because the ecosystem of mobile apps and devices is strongly connected to specific hardware features.” Additionally, PCs use a keyboard and mouse that most users prefer for input, while mobile devices use on-screen touch keyboard that is smaller and “. . . make typing more difficult for users[.]” See:

Computer Hope, “Computer vs. Smartphone,” 11/6/2021, <https://www.computerhope.com/issues/ch001398.htm>.

³¹⁸ Juego Studio, “Difference Between Mobile and PC Game Development,” 9/5/2022, <https://www.juegostudio.com/blog/difference-between-mobile-and-pc-game-development>.

³¹⁹ Juego Studio, “Difference Between Mobile and PC Game Development,” 9/5/2022, <https://www.juegostudio.com/blog/difference-between-mobile-and-pc-game-development>.

³²⁰ Juego Studio, “Difference Between Mobile and PC Game Development,” 9/5/2022, <https://www.juegostudio.com/blog/difference-between-mobile-and-pc-game-development>.

A source from the European Commission regarding the Activision Blizzard/King merger confirms the GDC survey results described above. In the context of segmenting the video game market, the source notes: “Producing PC and console games involves high investments and large teams of developers and, therefore, releases are less frequent compared to mobile games, which can be developed by small teams and are released in the hundreds per day[.] . . . PC and console games are more content-heavy than mobile ones, offering a more advanced gaming experience in terms of graphics, music, available options, gameplay, scope and depth of the storyline. On the contrary, mobile games do not require advanced design, music or narrative content. . . . [In comparison to PC and console games,] mobile game sessions are shorter and more repeated, with customers appreciating the possibility to play ‘on-to-go (e.g., while travelling to work, on a train, etc.) [.]” See:

European Commission, “Activision Blizzard/King Merger Decision,” 12/2/2016, at 4–5, available at: https://ec.europa.eu/competition/mergers/cases/decisions/m7866_221_3.pdf.

³²¹ Valve, Valve Responses to Developer Roundtable Questions, 5/3/2021 (VALVE_ANT_0425001–011, at VALVE_ANT_0425006).

purchase and play PC games on their laptops and desktops.”³²² Valve considers “the mobile [game] market as a little bit different from PC,” and even suggests that publishers who choose to sell games on both platforms “may wish to use a different business model or content strategy between the two places.”³²³

- (110) Valve indicates that while mobile games can be brought to PC, there are a variety of considerations for developers attempting to do so. For example, Valve lists game resolution, input, and the business model as important factors publishers wanting to bring mobile games to PC should consider, noting that “resolution is important for how your game appears on physically larger and higher-resolution [PC] screens” and inputs such as “[k]eyboard, mouse, [and] controller” are all important to get right.³²⁴ Valve encourages publishers to bring their non-PC games on Steam regardless of the “operating systems [they] are currently building for[.]”³²⁵ suggesting that Valve sees the PC gaming community as a separate, untapped, and arguably complementary market for mobile game developers.
- (111) Given the evidence, distribution of games via mobile app stores is complementary. It does not represent a substitute to third-party digital PC game distribution via platforms, and thus is not included in the relevant market.

Cloud gaming platforms

- (112) I also consider the possibility that cloud gaming platforms are substitutes for PC-gaming distribution services.³²⁶ I find that game distribution through cloud gaming services is not a viable substitute for PC game distribution services.

³²² *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR, Joint Discovery Letter Brief Regarding Apple’s Subpoena to Non-Party Valve Corporation, at 5 (N.D. Cal. February 18, 2021), available at Chris Schenck, Dep. Tr., 12/8/2023, Exhibit 382.

³²³ Valve, Emails Regarding Publishing on Steam, 5/1/2020 (VALVE_ANT_1198819).

Similarly, in response to Apple’s discovery request in *Epic Games v. Apple* case, Valve stated that the documents Apple was seeking had “. . . little or no value, as Valve does not compete in the mobile app market[.]” See:

Epic Games, Inc. v. Apple Inc., No. 4:20-cv-05640-YGR, Joint Discovery Letter Brief Regarding Apple’s Subpoena to Non-Party Valve Corporation, at 5–6 (N.D. Cal. February 18, 2021), available at Chris Schenck, Dep. Tr., 12/8/2023, Exhibit 382.

³²⁴ Valve, Steam Presentation, undated (VALVE_ANT_0601879.pptx, at Slide 25). (See the slide’s notes.)

³²⁵ Valve, Steam Presentation, undated (VALVE_ANT_0601879.pptx, at Slide 27).

³²⁶ Note that while I consider other forms of cloud gaming, such as cloud gaming as an additional feature on a given platform or cloud gaming as a complementary product, whereby a subset of games purchased elsewhere can be connected to an account, these cloud gaming options do not and cannot present reasonable alternatives or substitutes to PC-gaming distribution services.

For example, Microsoft’s Game Pass offers a cloud gaming feature with an upgraded subscription. See:

- (113) Cloud PC gaming is inherently different from traditional PC gaming. Cloud gaming allows users who have access to the internet to “play games on remote servers rather than on a local device[,]” eliminating the need to purchase a PC with specific and expensive hardware capabilities, and allowing users to play games from anywhere and on any device.³²⁷ Cloud gaming requires a fast internet connection; otherwise, users may experience latency issues, which are “the delay between a player’s input and the game’s response[,]”³²⁸ and negatively affect the cloud gaming user experience.³²⁹ In contrast, “traditional gaming offers a more stable and reliable gaming experience” as “games are played on local hardware” with “little to no latency[.]”³³⁰ Another source remarks that PC gaming “offers a level of performance and customization that cloud gaming currently cannot match[.]”³³¹
- (114) A Morgan Stanley analyst report remarks about the challenges facing cloud gaming. In contrast to cloud music and video services, in cloud gaming services, “the game has to wait for the user to take an action before it generates video/audio and this introduces the issue of

Xbox Website, Xbox Cloud Gaming (Beta), <https://www.xbox.com/en-US/cloud-gaming> (accessed 2/5/2024).

NVIDIA GeForce Now represents a service where you can complement existing games purchased on other platforms. See:

Nvidia Website, GeForce Now, <https://www.nvidia.com/en-us/geforce-now/> (accessed 2/5/2024).

See also:

Rietveld Report, 2/8/2024, §XI.E.

³²⁷ TS2, “Cloud Gaming Vs Traditional Gaming: Which One Wins?,” 7/7/2023, <https://ts2.space/en/cloud-gaming-vs-traditional-gaming-which-one-wins/>.

³²⁸ TS2, “Cloud Gaming Vs Traditional Gaming: Which One Wins?,” 7/7/2023, <https://ts2.space/en/cloud-gaming-vs-traditional-gaming-which-one-wins/>.

³²⁹ TS2, “Cloud Gaming Vs Traditional Gaming: Which One Wins?,” 7/7/2023, <https://ts2.space/en/cloud-gaming-vs-traditional-gaming-which-one-wins/>.

³³⁰ TS2, “Cloud Gaming Vs Traditional Gaming: Which One Wins?,” 7/7/2023, <https://ts2.space/en/cloud-gaming-vs-traditional-gaming-which-one-wins/>.

³³¹ ISP.today, “Exploring the Future of Gaming: PC vs Cloud Games,” 9/12/2023, <https://isp.page/news/exploring-the-future-of-gaming-pc-vs-cloud-games/>.

Additionally, for example, “[w]hen comparing input latency for multiplayer games, a physical PC will always pull ahead. Your keyboard and mouse inputs go directly to the PC, which is then sent over the Internet to the main server. Inputs on cloud PCs, on the other hand, have to travel from your PC to the cloud rig and then onto the game servers. This is a potential problem if you want to play very competitive and quick shooters, such as Counter-Strike or Rainbow Six Siege.” See:

MakeTechEasier, “Cloud Gaming vs. Gaming PC: Is Streaming Games Your Best Option?,” 7/8/2020, <https://www.maketecheasier.com/cloud-gaming-vs-gaming-pc/>.

After researching and testing cloud gaming services for three months, the New York Times remarked in a 2023 article that “even the most popular cloud gaming options provide service that can be difficult to predict or rely on, and it’s tough for us to recommend any of them.” See:

New York Times, “The Best Cloud Gaming Services Aren’t Great (Yet),” 6/29/2023, <https://www.nytimes.com/wirecutter/reviews/best-cloud-gaming-services/>.

latency, i.e. the lag between when a user inputs a command and the corresponding action appears on-screen[;]” this “latency is often significant enough to make cloud gaming awkward or unplayable[.]”³³² This helps to demonstrate that “the underlying technology has not advanced to the point where it can replace a traditional console or gaming PC for the average gamer[.]” leading Morgan Stanley to “think cloud gaming is likely to take longer (5-10 years) due to latency and technological hurdles.”³³³

- (115) Valve’s documents also demonstrate that it views PC games and distribution services as non-alternatives from cloud gaming services. A 2020 Valve analysis implies that [REDACTED]
[REDACTED]
[REDACTED]³³⁴ and internal Valve emails demonstrate that [REDACTED]
[REDACTED]
[REDACTED]³³⁵

- (116) The above evidence suggests that cloud gaming platforms are not, at the moment, viable alternatives for third-party digital PC game distribution platforms, and thus are not included in the relevant market.

4.1.4. Relevant geographic market

- (117) As discussed in Section 3.3, Steam operates across the world and has users located worldwide. As stated in the Steamworks documentation, “Steam is a global platform with official support for 28 languages across many platform features. Supporting as many

³³² Valve, Analyst Report Regarding Cloud Gaming, 10/21/2018 (VALVE_ANT_0059571–9643, at VALVE_ANT_0059600).

³³³ Valve, Analyst Report Regarding Cloud Gaming, 10/21/2018 (VALVE_ANT_0059571–643, at VALVE_ANT_0059580, VALVE_ANT_0059600).

³³⁴ Valve, “GDC 2020 – Competitor Analysis,” 2020, (VALVE ANT 0019400–02, at VALVE ANT 0019401), available at Scott Lynch, Dep. Tr., 10/13/2023, Exhibit 156. [REDACTED]

³³⁵ Valve, Emails Regarding Stadia, 3/21/2019–4/3/2019 (VALVE ANT 0060482–494, at VALVE ANT 0060484, VALVE ANT 0060485). [REDACTED]

languages, currencies and payment methods as possible enables Steam to provide the best experience possible to customers around the world.”³³⁶

- (118) Steam’s operations have a global reach.³³⁷ Other third-party digital PC game distribution platforms also operate globally. For example, EGS distributes games “across 187 countries with 16 languages supported.”³³⁸ Green Man Gaming also markets and sells video games globally,³³⁹ operating in 195 countries and supporting 11 languages.³⁴⁰ Non-gameplay distribution platforms also operate globally. For example, Humble Bundle supports developers and delivers games to users “around the world[.]”³⁴¹
- (119) Steam and other market participants are banned or restricted in certain geographies. For example, while Steam is available in China, it is a restricted version of the worldwide Steam platform.³⁴² Additionally, Indonesia has banned access to EA after EA failed to comply with the country’s restrictive content moderation laws.³⁴³ EGS is available in most countries

³³⁶ Steamworks Website, Localization and Languages, <https://partner.steamgames.com/doc/store/localization> (accessed 10/31/2023).

³³⁷ See, for example:

Valve, Steam Update Presentation, c. 2014 (VALVE_ANT_1221398.pptx, at slide 2).

Valve, Steam Platform Update, 5/31/2016 (VALVE_ANT_1555095.pptx, at slides 5–7, 32).

Valve, “Steam Business Update,” c. 2017 (VALVE_ANT_1818477–516, at VALVE_ANT_1818481–482, VALVE_ANT_1818495–497, VALVE_ANT_1818508).

Valve, Steam Presentation in Japan, c. 2017 (VALVE_ANT_0601879.pptx, at slides 6–8).

Valve, “Steam Update,” c. 2018 (VALVE_ANT_1444189–220, at VALVE_ANT_1444192–195).

³³⁸ EGS Website, Epic Games Store Offers App, Software and Game Distribution, <https://store.epicgames.com/en-US/distribution> (accessed 11/10/2023).

³³⁹ Green Man Gaming Website, Home Page, <https://corporate.greenmangaming.com/> (accessed 11/17/2023). (“[Green Man Gaming is a] truly global store with an industry-leading performance marketing team that turns your awareness into sales across the world.”)

³⁴⁰ Green Man Gaming Website, About Us, <https://corporate.greenmangaming.com/about-us/> (accessed 11/17/2023).

³⁴¹ LinkedIn, Humble Bundle, <https://www.linkedin.com/company/humble-bundle> (accessed 11/10/2023).

³⁴² Steamworks Website, Steam China, <https://partner.steamgames.com/doc/store/china> (accessed 11/17/2023). (“Valve has partnered with Perfect World to bring an onshore version of Steam to China, called Steam China (蒸汽平台). At this time, we are working with a select group of partners for releasing games on Steam China. A prerequisite to publishing games on Steam China is receiving Chinese government approval for your game.”)

Steam China Website, Home Page, <https://store.steamchina.com/> (accessed 1/30/2024).

³⁴³ The Verge, “Indonesia Unblocks Steam and Yahoo, But Fortnite and FIFA Are Still Banned,” 8/2/2022, <https://www.theverge.com/2022/8/2/23288488/indonesia-steam-yahoo-fortnite-fifa-block-epic-games-origin>. (“Last week, Indonesia blocked access to Steam, PayPal, Yahoo, Epic Games, and Origin after the companies failed to meet a deadline to register with the country’s database. This requirement is bundled with a broader law, called MR5, that Indonesia first introduced in 2020.”)

around the world “except where prohibited by US law, such as North Korea and Iran.”³⁴⁴ Similarly, Discord is banned in China, North Korea, the United Arab Emirates, Oman, and Egypt.³⁴⁵

- (120) Given the global operations of Steam and its competitors, I conservatively assume the geographic market is worldwide. However, with the restrictions, bans, and prohibitions under U.S. law as mentioned above, the geographic market could exclude territories that restrict or ban these gaming platforms, such as China, North Korea, and Iran.

4.2. Economic assessment of monopoly power

4.2.1. Measurement of monopoly power in the relevant market

- (121) Antitrust analysis is focused on situations where firms engage in anticompetitive conduct, such as attempting to monopolize a market or maintain a monopoly in a market through the suppression of competition.³⁴⁶ If a firm can influence market prices, that firm possesses *market power*.³⁴⁷ In the language of economics, if a firm faces a downward sloping demand curve—consumers will purchase more at lower prices and less at higher prices—that firm has market power.³⁴⁸ Market power is a non-pejorative term. The overwhelming number of firms operating in the economy possess some degree of market power. Most firms have some control

The Verge, “Indonesia Bans Access to Steam, Epic Games, PayPal, and More,” 7/31/2022, <https://www.theverge.com/2022/7/30/23285091/indonesia-bans-access-steam-epic-games-paypal-yahoo>. (“The Indonesian government has blocked access to a range of online services, including Steam, Epic Games, PayPal, and Yahoo after the companies failed to comply with a new requirement related to the country’s restrictive content moderation laws, as reported earlier by *Reuters*.”)

Tech Explore, “Epic Games No Longer Blocked in Indonesia After Registering with Government,” 8/10/2022, <https://techxplore.com/news/2022-08-epic-games-longer-blocked-indonesia.html>.

³⁴⁴ Epic Games Website, Frequently Asked Questions, <https://www.epicgames.com/site/en-US/epic-games-store-faq> (accessed 11/17/2023). (“Where is the Epic Games store available? The Epic Games Store is available to players in most countries in the world except where prohibited by US law, such as North Korea and Iran.”).

³⁴⁵ IT Geared, “What Countries is Discord Banned In?,” 5/15/2023, <https://www.itgeared.com/what-countries-is-discord-banned-in/>. (“The countries which have Discord banned include the following: China[,] North Korea[,] United Arab Emirates[,] Oman[,] and] Egypt[.]”)

³⁴⁶ FTC Website, The Antitrust Laws, <https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws/antitrust-laws> (accessed 2/6/2024).

³⁴⁷ Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 148.

³⁴⁸ Varian, Hal R. (2014), *Intermediate Microeconomics: A Modern Approach*, 9th ed., New York: W.W. Norton & Company, at 496. (“The industry structure is monopolistic in that each firm faces a downward-sloping demand curve for its product. It therefore has some market power in the sense that it can set its own price, rather than passively accept the market price as does a competitive firm.”)

over the prices they charge—and, thus, some degree of market power—because of product differentiation.³⁴⁹

- (122) Market power exists on a continuum. At one extreme, firms have no market power, as in a *perfectly competitive* market.³⁵⁰ At the other extreme, as in a *pure monopoly*, there is only one firm—the *monopolist*—with complete control over the market price.³⁵¹ In between these extremes are markets characterized as *imperfectly competitive*.³⁵²
- (123) Market power becomes a concern for antitrust analysis when a firm gains significant market power, sometimes referred to as *monopoly power*.³⁵³ Firms with monopoly power can set and sustain prices above the competitive level and set market output below the competitive level, *i.e.*, “artificially restricted below the socially optimum level.”³⁵⁴ They can exclude competitors or make it difficult for competitors, whether existing or new entrants, from having the opportunity to compete effectively on the merits. A market’s structure—which refers to characteristics such as the size and strength of competitors and potential competition—is one of the indicia of market and monopoly power.³⁵⁵ One way to describe market structure is by measuring market concentration. An oft-used measure of market concentration is the Herfindahl-Hirschman Index (“HHI”).³⁵⁶ The HHI is calculated as the sum of squares of the market shares of the firms in the relevant market.³⁵⁷ A perfectly competitive market would

³⁴⁹ Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 311–312.

³⁵⁰ Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 320.

³⁵¹ Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 320.

³⁵² Most market structures in the economy lie between these two market extremes of perfect competition and monopoly, and face some competition while having some degree of market power.

Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 320.

³⁵³ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 937.

³⁵⁴ Kamerschen, David R. (1976), “The Economic Effects of Monopoly: A Lawyer’s Guide to Antitrust Economics,” *Mercer Law Review* 27(4): 1061–1109, at 1062.

³⁵⁵ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 236.

³⁵⁶ U.S. Department of Justice and Federal Trade Commission, “Merger Guidelines,” 12/18/2023, § 2.1, available at: https://www.ftc.gov/system/files/ftc_gov/pdf/P234000-NEW-MERGER-GUIDELINES.pdf.

³⁵⁷ Carlton, Dennis W. and Jeffrey M. Perloff (2000), *Modern Industrial Organization*, 3rd ed., Reading, MA: Addison-Wesley, at 247.

The U.S. Department of Justice and the FTC consider HHIs below 1,000 as relatively unconcentrated, HHIs of 1,000 to 1,800 as moderately concentrated, and HHIs greater than 1,800 as highly concentrated.

U.S. Department of Justice and Federal Trade Commission, “Merger Guidelines,” 12/18/2023, § 2.1, fn. 15, available at: https://www.ftc.gov/system/files/ftc_gov/pdf/P234000-NEW-MERGER-GUIDELINES.pdf.

have an HHI close to zero, a pure monopoly would generate an HHI of 10,000 (= 100 × 100).³⁵⁸ While high concentration does not, by itself, *prove* that a firm has monopoly power, a persistent high level of concentration is indirect evidence of monopoly power.

- (124) Another metric for assessing market power is the Lerner Index, which measures a firm’s price to marginal cost.³⁵⁹ The Lerner Index is calculated by taking the difference between the price at which the firm sells its output and its marginal cost for that output (“price-cost margin”), and then dividing by the price:³⁶⁰

$$\text{Lerner Index} = \frac{P - MC}{P}$$

- (125) A perfectly competitive firm would have a Lerner Index equal to 0, as price is equal to marginal cost.³⁶¹ As a firm acquires more market power, its price-cost margin increases, and the Lerner Index rises. All else equal, a larger Lerner Index value is consistent with a greater degree of market power, with a perfect monopoly equal to 1.³⁶²
- (126) Economists look to see if there is either direct or indirect evidence of monopoly power.³⁶³ Monopoly power can be inferred from direct evidence that a firm can raise prices to a supracompetitive level for an extended period of time,³⁶⁴ along with “evidence of restricted

³⁵⁸ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 364.

³⁵⁹ Carlton, Dennis W. and Jeffrey M. Perloff (2000), *Modern Industrial Organization*, 3rd ed., Reading, MA: Addison-Wesley, at 246.

³⁶⁰ Carlton, Dennis W. and Jeffrey M. Perloff (2000), *Modern Industrial Organization*, 3rd ed., Reading, MA: Addison-Wesley, at 246.

³⁶¹ Carlton, Dennis W. and Jeffrey M. Perloff (2000), *Modern Industrial Organization*, 3rd ed., Reading, MA: Addison-Wesley, at 264.

³⁶² Carlton, Dennis W. and Jeffrey M. Perloff (2000), *Modern Industrial Organization*, 3rd ed., Reading, MA: Addison-Wesley, at 264.

³⁶³ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 226–240.

³⁶⁴ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 226–227.

Werden, Gregory J. (2000), “Market Delineation Under the Merger Guidelines: Monopoly Cases and Alternative Approaches,” *Review of Industrial Organization* 16(2): 211–218, at 214.

See, also:

Blair, Roger D. and Celeste K. Carruthers (2010), “The Economics of Monopoly Power in Antitrust,” in Keith N. Hylton, ed., *Antitrust Law and Economics*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing, Inc., at 73.

output” and “an abnormally high price-cost margin.”³⁶⁵ Monopoly power can also be inferred from direct evidence of “actual exclusion of competition from the relevant market.”³⁶⁶

- (127) In some instances, direct evidence of monopoly power may be difficult to attain. In such cases, economists also examine indirect evidence of monopoly power, *e.g.*, market share or entry barriers. While not dispositive, a persistently high market share provides economically meaningful indirect evidence of monopoly power.³⁶⁷ While there is no specific market share threshold establishing monopoly power, there are share levels that are often viewed as meaningful demarcation points. For example, “a market share in excess of 70 percent generally establishes a *prima facie* case of monopoly power.”³⁶⁸ Relying on market share as evidence of monopoly power requires evidence of “a relevant product market,” “a dominant share of the relevant market,” and “high barriers to entry.”³⁶⁹ In addition, for such shares to support meaningful inferences about the presence of monopoly power, such high shares must be persistent.

4.2.2. Valve’s supracompetitive commission rate is direct evidence of monopoly power

- (128) A firm raising prices to a supracompetitive level for an extended period of time is direct evidence of monopoly power.³⁷⁰ As will be discussed in more detail in Section 6.1, Valve has

³⁶⁵ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 227.

³⁶⁶ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 226.

See, also:

Blair, Roger D. and Celeste K. Carruthers (2010), “The Economics of Monopoly Power in Antitrust,” in Keith N. Hylton, ed., *Antitrust Law and Economics*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing, Inc., at 73.

Note that the fact that a firm has foreclosed competition by excluding competitors is economic evidence of a diminution in output, and hence, monopoly power, all else equal.

³⁶⁷ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 229.

See, also:

Blair, Roger D. and Celeste K. Carruthers (2010), “The Economics of Monopoly Power in Antitrust,” in Keith N. Hylton, ed., *Antitrust Law and Economics*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing, Inc., at 74.

³⁶⁸ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 230.

³⁶⁹ ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 229.

³⁷⁰ Werden, Gregory J. (2000), “Market Delineation Under the Merger Guidelines: Monopoly Cases and Alternative Approaches,” *Review of Industrial Organization* 16(2): 211–218, at 214.

ABA Section of Antitrust Law (2017), *Antitrust Law Developments*, 8th ed., Chicago, IL: ABA Publishing, at 226–228.

See, also:

set and maintained a supracompetitive commission rate on Steam. Even in the face of entry, as discussed in Section 6.2, Valve maintains its supracompetitive commission rate. While Valve moved to a tiered commission structure in 2018,³⁷¹ that revised commission structure still establishes supracompetitive rates. Most developers still face the 30% commission rate, and those who make enough sales to reach the lower-rate tiers are *still* overcharged. See Sections 7.4 and 8.5.

- (129) As a matter of economics, Valve’s supracompetitive commission rate also results in decreased output, all else equal.³⁷² Since the fees are higher than what would exist in a competitive market, publishers have higher marginal costs. Publishers must consider those costs when determining consumer prices for their games, potentially passing through those costs, at least in part, to the consumer. This leads to higher consumer prices, which decreases the quantities of games purchased by end consumers of games. For example, Microsoft changed the developer’s share of Microsoft Store PC games sales net revenue from 70% to 88% in order to “empower every PC game creator to achieve more.”³⁷³ Microsoft added that “[a] clear, no-strings-attached revenue share means developers can bring *more games to more players* and find greater commercial success from doing so.”³⁷⁴

4.2.3. Valve’s high and sustained market share over time is economic evidence of monopoly power

- (130) Valve’s worldwide market share, measured in terms of third-party game user sales occurring on Steam, is between approximately [REDACTED].³⁷⁵ As discussed in Section 4.2.1, this provides a powerful economic basis for the conclusion that Valve has monopoly power in the relevant market. The fact that Valve has been able to sustain this high market share is further evidence of its monopoly power.

Blair, Roger D. and Celeste K. Carruthers (2010), “The Economics of Monopoly Power in Antitrust,” in Keith N. Hylton ed., *Antitrust Law and Economics*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing, Inc., at 73.

³⁷¹ See Section 3.3.4 for further discussion.

³⁷² Mankiw, N. Gregory (2012), “The Market Forces of Supply and Demand,” in N. Gregory Mankiw, ed., *Principles of Microeconomics*, Mason, Ohio: South-Western Cengage Learning, at 67. (“Other things equal, when the price of a good rises, the quantity demanded of the good falls, and when the price falls, the quantity demanded rises.”)

³⁷³ Microsoft Xbox Wire, “Continuing Our PC Gaming Journey in 2021 and Beyond,” 4/29/2021, <https://news.xbox.com/en-us/2021/04/29/continuing-our-pc-gaming-journey-in-2021-and-beyond/>.

³⁷⁴ Microsoft Xbox Wire, “Continuing Our PC Gaming Journey in 2021 and Beyond,” 4/29/2021, <https://news.xbox.com/en-us/2021/04/29/continuing-our-pc-gaming-journey-in-2021-and-beyond/>. (Emphasis added).

³⁷⁵ See Attachment E-1.

- (131) Evidence from this case and trade press support the conclusion that Valve’s market share in the relevant market is high and has been over time. For example:³⁷⁶
- a. An indie game handbook (2015) states that “[t]he portal of choice is most definitely Steam. In every indie sales report I’ve seen, Steam sales eclipse all other portals by a large margin, often selling several times more than on other portal sites.”³⁷⁷
 - b. In email correspondence offering a publisher advice regarding Steam (2018), Valve told the publisher that “[i]f, like many other publishers, you see ██████ of your PC business via Steam, I’d prioritize making sure you’re priced as competitively as possible on Steam rather than tweaking steam [sic] prices to accommodate a store with much lower throughput[;]” the publisher then confirmed that “[y]ou are correct that the vast majority of our business comes from Steam.”³⁷⁸
 - c. An EGS board presentation (2019) calculates market shares for a handful of potential competitors in 2018 and expectations for 2019, with Steam taking the vast majority of the market, 94.0% and 86.2%, respectively.³⁷⁹
 - d. An EGS presentation (2019) states that Steam had a 95%+ market share of all third-party digital PC games sales (excluding “Origin, [B]attle.net and Riot etc.”).³⁸⁰ The source also states that “[n]o PC store w[ith] non[-]exclusive content has built market share over 2%[.]”³⁸¹

³⁷⁶ For additional examples, see:

Valve, Email Regarding ██████ Meeting, 11/18/2013 (VALVE_ANT_1568128–29, at VALVE_ANT_1568128), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 263. (Following a 2013 meeting with ██████, Valve noted that a faction within ██████ had “[m]ixed feelings on Valve” including because of a fear that “with ██████ of PC market segment share, Valve is too powerful for their comfort.”)

Valve, Emails Regarding New Game, 4/10/2015–4/15/2015 (VALVE_ANT_1687802–07, at VALVE_ANT_1687803, VALVE_ANT_1687806–07). (In an email, a publisher told Valve that it is planning on releasing its game on Steam because “Steam is the biggest platform – no questions asked.”)

Limpach, Odile (2020), *The Publishing Challenge for Independent Video Game Developers[;] A Practical Guide*, Boca Raton, FL: Taylor & Francis Group, at 18. (“As of today, Valve holds the monopoly on indie game sales for the PC market. Smaller stores such as GOG and Itch.io offer value with Digital Right Management (DRM)-free games or a greater indie focus, but in terms of users or sales volume, neither come close to Steam.”)

³⁷⁷ Hill-Whittall, Richard (2015), *The Indie Game Developer Handbook*, Burlington, MA: Taylor & Francis Group, at 117.

³⁷⁸ Valve, Emails Regarding Background and Advice, 8/16/2018–8/20/2018 (VALVE_ANT_0606204–08, at VALVE_ANT_0606204, VALVE_ANT_0606206).

³⁷⁹ Epic, “Presentation to the Board of Directors,” 8/13/2019 (EPIC_VALVE_0000364–389, at EPIC_VALVE_0000368).

³⁸⁰ Epic, Epic Games Store Presentation, c. 2019 (EPIC_VALVE_0000013–057, at EPIC_VALVE_0000021).

³⁸¹ Epic, Epic Games Store Presentation, c. 2019 (EPIC_VALVE_0000013–057, at EPIC_VALVE_0000021).

shows a Valve annual market share of between [REDACTED] and [REDACTED] from 2017 to 2021 and a weighted-average market share of [REDACTED] over the five-year span. See Attachment E-1.

- (133) Valve recognizes its strong position in the market. For example, an internal Valve document identifies that EGS and Discord are entrants in the market and recognizes Epic as [REDACTED]³⁸⁴ However, that document also says that, while Epic is [REDACTED] Valve considers Epic’s [REDACTED]

[REDACTED]³⁸⁵

As noted previously, Discord’s sales are likely *de minimis*. As discussed throughout this report, the Discord Store was first established in 2018, but was unable to successfully compete and exited the relevant market in 2019. See Section 6.2.

I have similarly found no evidence of third-party sales on Itch.io, however, I understand that Itch.io’s sales are *de minimis* and would not impact Steam’s share of the relevant market. See Section 6.2.

As discussed throughout this report, EA was unable to succeed with their third-party offerings on their own platform. See Section 6.2. On June 13, 2022, EA stopped offering games from third-party publishers on the Origin platform. See:

Electronic Arts, “Upcoming Changes to the EA Origin Catalog,” c. 6/2022, <https://www.ea.com/ea-pc-third-party-titles-2022>.

Further, I understand the majority of EA’s PC gaming revenues are associated with first-party games and subscription services. For example, Epic’s presentation that calculates 2018 and 2019 market shares does not explicitly state any sales for EA’s third-party platform. See:

Epic, “Presentation to the Board of Directors,” 8/13/2019 (EPIC_VALVE_0000364–389, at EPIC_VALVE_0000369).

Additionally, EA’s Form 10-Ks do not mention third-party sales, instead emphasizing first-party offerings on their own platform and on other third-party platforms, such as Steam. For example, EA’s Form 10-K for the fiscal year ending on March 21, 2022, which was before EA stopped selling third-party games on its platform, states that “[EA’s] PC games and services can be downloaded directly through Origin, EA’s digital storefront, as well as through third-party online download stores, such as Steam.” The filing further states that, “We also offer our EA Play subscription service on consoles and PC as we look to build deeper relationships with our players and offer increased choice and flexibility for our players to try new games.” EA also states that they “derive revenue principally from sales of *our* games, and related extra content and services that can be experienced on game consoles, PCs, mobile phones and tablets.” EA lists the following as their main “product and service offerings”:

“[F]ull games with both online and offline functionality (‘Games with Services’), which generally includes (1) the initial game delivered digitally or via physical disc at the time of sale and typically provide access to offline core game content (‘software license’); (2) updates on a when-and-if-available basis, such as software patches or updates, and/or additional free content to be delivered in the future (‘future update rights’); and (3) a hosted connection for online playability (‘online hosting’); full games with online-only functionality which require an Internet connection to access all gameplay and functionality (‘Online-Hosted Service Games’); extra content related to Games with Services and Online-Hosted Service Games which provides access to additional in-game content; subscriptions, such as EA Play and EA Play Pro, that generally offer access to a selection of full games, in-game content, online services and other benefits typically for a recurring monthly or annual fee; and licensing to third parties to distribute and host our games and content.”

EA, Form 10-K, 2022, at 4–5, 28. (Emphasis added.)

See also: EA, Form 10-K, 2021, at 4–5, 28.

³⁸⁴ Valve, Competitive Landscape Analysis, undated (VALVE_ANT_1221442–44, at VALVE_ANT_1221442).

³⁸⁵ Valve, Competitive Landscape Analysis, undated (VALVE_ANT_1221442–44, at VALVE_ANT_1221443).

- (134) Mr. Lynch testified that the reason Steam is more valuable to both developers and users is because there are a lot of “developers putting games on Steam” and a lot of users who play those games on Steam.³⁸⁶ This is a classic description of strong network effects³⁸⁷ and network effects, all else equal, make entry more difficult. The issue here is that Valve’s policies prevent any entrant from building its own network effects and challenging the dominance enjoyed by Steam. As Valve prevents entrants from building their network effects, its policies to strengthen its own network effects creates entry barriers and insulates Valve from a meaningful threat of effective entry.³⁸⁸ Valve states that “sophisticated players like [REDACTED] [REDACTED] haven’t really entered the picture yet[,]” so it is “important for us to expand the reach of the platform into new territories[.]”³⁸⁹ This plan raises the height of entry barriers and provides Valve with a mechanism to protect its monopoly power in the relevant market.

4.2.4. Valve’s high and sustained profitability over time is economic evidence of monopoly power

- (135) A key indicator of monopoly power is sustained profitability. Persistently high margins are consistent with the possession of monopoly power; when those high margins persist in the face of competition or when potential rivals are prevented either from entering or from being effective competitors (*e.g.*, due to Valve’s PMFN Policy), such persistently high profits likely indicate monopoly power, all else equal. Valve’s [REDACTED] in the relevant market have [REDACTED]; perhaps more importantly, its [REDACTED] have remained [REDACTED], as well, even in the face of market entry.
- (136) In a market where there is effective competition, Valve’s supracompetitive profitability on Steam would attract potential entrants, leading to competition on price and a reduction in profitability for Steam. That has not happened in this market. There are significant barriers to entry that deter potential competitors, and even when competitors have entered the market,

³⁸⁶ Scott Lynch, Dep. Tr., 10/12/2023, at 245:9–24. (“Q. Steam is more valuable to developers if there are more consumers using it; right? A. I don’t -- well, I don’t use the word ‘consumers.’ It’s -- Steam is valuable because a bunch of users like Steam and it provides value to them and there are other games. And when somebody releases a game on Steam, they get, you know, all the benefits of Steam and all the platform features we’ve built and all the users that enjoy it and like it. Q. One of the benefits to developers is that there are lots of users of Steam; right? A. One of the benefits is there are a lot of people that use Steam and like Steam, yes. Q. One of the benefits to users is that there’s lots of developers putting games on Steam; right? A. Yes, that’s true.”)

³⁸⁷ See Section 3.3.

³⁸⁸ See Section 5.1.3.

³⁸⁹ Valve, Competitive Landscape Analysis, undated (VALVE_ANT_1221442–44, at VALVE_ANT_1221444).

policies such as Valve’s PMFN prevent them from being effective competitors, competing away some of Steam’s profits, and eroding its margins.

(137) Valve’s margins on Steam indicate [REDACTED]. Below, I discuss Valve’s Steam financials, as well as the adjustments I make to them.

Valve’s Steam financial reports

(138) Valve’s *reported* Steam revenues, cost of sales, gross margins, and other financial metrics are outlined in Attachment D-1. Steam’s reported revenue [REDACTED] from 2003 to 2021, from approximately [REDACTED]. Total cost of sales reported in Valve’s Steam financials [REDACTED]. As a new business in a nascent market, Steam’s reported gross margin was [REDACTED] in early years, and reached [REDACTED] by 2008, where it has [REDACTED] since, with a reported gross margin of [REDACTED] in 2021.³⁹⁰

(139) Valve’s reported financials are misleading and are not a fair economic presentation of its actual financial performance. In its P&L, Valve reports [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

³⁹⁰ As Valve is not a publicly traded company, its financials are not required to be audited by a third-party.

³⁹¹ Valve, Valve P&L Statements, c. 2022 (VALVE_ANT_2755012_HIGHLY CONFIDENTIAL_ATTORNEY EYES ONLY.xlsx).

- (140) This approach to reporting revenues and costs is economically misleading and artificially deflates Steam’s reported margins as a result. Recall that Steam is a platform on which third-party developers make their games available for purchase to end consumers. Valve emphasizes that Steam “work[s] on rev[enue] share[,] not on wholesale price”³⁹⁴ and, accordingly, collects a prespecified portion (*e.g.*, 30%) of the transaction values of games purchased on its platform, while the remainder of the transaction values (*e.g.*, 70%) is remitted to developers and contributors for game modifications.³⁹⁵ For these transactions, Steam neither sets the price nor holds intellectual property or other rights to the game; Steam merely operates as a distribution agent.
- (141) Valve’s Steam revenues should reflect the economic value it receives for the services *Steam* provides. [REDACTED]

Valve, “Valve Corporation Combined Profit and Loss: January Through December 2013,” 7/31/2014 (VALVE_ANT_2976575–78, at VALVE_ANT_2976575). (See ‘Cyber Café’ line item [REDACTED].)

393

[REDACTED]

G Skok Letter to N Siebert, *In re Valve Antitrust Litigation*, 10/6/2023, at 10–12. [REDACTED]

Valve, Partner Payments, 10/2018 (VALVE_ANT_2842645.xlsx, at ‘10.18 pmt n holds’ tab). (See “Partner Totals” and “Partner Payment Totals.”) See also: Wolfire, Partner and Contractor Payments, c. 2015–2016 (WOLFIRE_00093646.xlsx, at ‘Sheet 1’ tab).

Dark Catt, “Valve Corporation Steam Distribution Agreement,” c. 2022 (DarkCatt 0006449–471, at DarkCatt 0006459).

[REDACTED] See also: Valve, “Monthly Partner Meeting,” 12/17/2018 (VALVE_ANT_0046060.pptx, at slide 34).

394

Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–490, at VALVE_ANT_0053489), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45.

395

See Section 3.3.4 of this report for more details on the apportionment of revenues between Steam and developers.

See, for example:

NC Interactive, Steam Distribution Agreement with Valve, 5/1/2020 (NCI_Valve_0001245–261, at NCI_Valve_0001252). (See Section 6.3.2 of the Agreement.)

Valve, “Valve Corporation Steam Distribution Agreement – Online Version,” undated (VALVE_ANT_0000008–15, at VALVE_ANT_0000011), available at Erik Peterson, Dep. Tr., 11/15/2023, Exhibit 295. (See Section 6.3.2 of the Agreement.)

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[REDACTED]
[REDACTED] From an economic standpoint, revenues should equal only the portion of the transaction value of purchases collected by Steam (excluding the portion remitted to the third-party developers), which is equal to Steam’s commission rate.

(142) Thus, Valve’s reported Steam financials produced in connection with this case are not a fair representation of the underlying economics of the transactions on the Steam platform. They do not appropriately reflect the payment and costs Valve received and incurred for the services provided. Thus, as an economic matter, they misrepresent actual revenues received and costs incurred. Because of the distortion created by this misrepresentation, the financial statements produced in connection with this case are not reliable economic indicators of either the revenues, costs, or profits for the Steam platform. Valve’s Steam revenues should be adjusted [REDACTED]
[REDACTED]. This adjustment better aligns the services provided by Steam with actual revenues earned.

Adjusted produced Steam financials

(143) I adjust Valve’s financials [REDACTED]
[REDACTED]
[REDACTED].³⁹⁶ See Attachments D-2 and D-3. First, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

³⁹⁶ As I understand it, these adjustments also make Valve’s Steam financials [REDACTED].

³⁹⁷ [REDACTED]

NC Interactive, Steam Distribution Agreement with Valve, 5/1/2020 (NCI_Valve_0001245–261, at NCI_Valve_0001252). (See Section 6.3.2 of the Agreement.)

Valve, “Valve Corporation Steam Distribution Agreement – Online Version,” undated (VALVE_ANT_0000008–15, at VALVE_ANT_0000011), available at Erik Peterson, Dep. Tr., 11/15/2023, Exhibit 295. (See Section 6.3.2 of the Agreement.)

See Attachments D-2 and D-3. From 2003–2021, Steam’s commission rate [REDACTED] was approximately [REDACTED], suggesting that these financials accurately reflect Steam’s 30% base commission rate (through 2018) and tiered structure (since November 2018). See Attachment D-3.

(144) Valve’s P&Ls contain additional [REDACTED] [REDACTED] [REDACTED]³⁹⁸ However, to be conservative, I adjust Steam’s gross and operating margins by allocating these [REDACTED] [REDACTED] based on total revenues. See Attachments D-4 and D-5.

(145) After adjusting Steam’s financials [REDACTED] [REDACTED] Steam’s gross profit margins are [REDACTED] than as originally presented.³⁹⁹ From 2009 [REDACTED] [REDACTED] through 2021, Steam’s annual commissions [REDACTED] from [REDACTED] [REDACTED]. In the same period, Steam’s gross profit margins [REDACTED] [REDACTED], from [REDACTED] in 2009 to [REDACTED] in 2021. From 2017 through 2021, Steam’s gross profit margin was [REDACTED].⁴⁰⁰

³⁹⁸ Scott Lynch, Dep. Tr., 10/13/2023, at 86:13–87:8. (Question regarding Valve, Valve P&L Statements, c. 2022 (VALVE_ANT_2755012_HIGHLY CONFIDENTIAL_ATTORNEY EYES ONLY.xlsx): “Q. You understand that this reflects Valve’s financial statements from 2003 until 2021? A. Well, we don’t prepare anything like this. So my understanding is this was prepared for the purposes of the litigation and, you know, for lack of a better word, I’ll call it a pro forma profit and loss statement in which they tried to create, you know, a -- or they’ve created a P&L under certain categories.” [REDACTED]

³⁹⁹ The gross profit margin is a financial metric that measures a company’s net sales minus the cost of goods sold (cost of revenues). See:

Corporate Finance Institute Website, Gross Margin Ratio, <https://corporatefinanceinstitute.com/resources/accounting/gross-margin-ratio/> (accessed 12/15/2023).

⁴⁰⁰ See Attachment D-5.

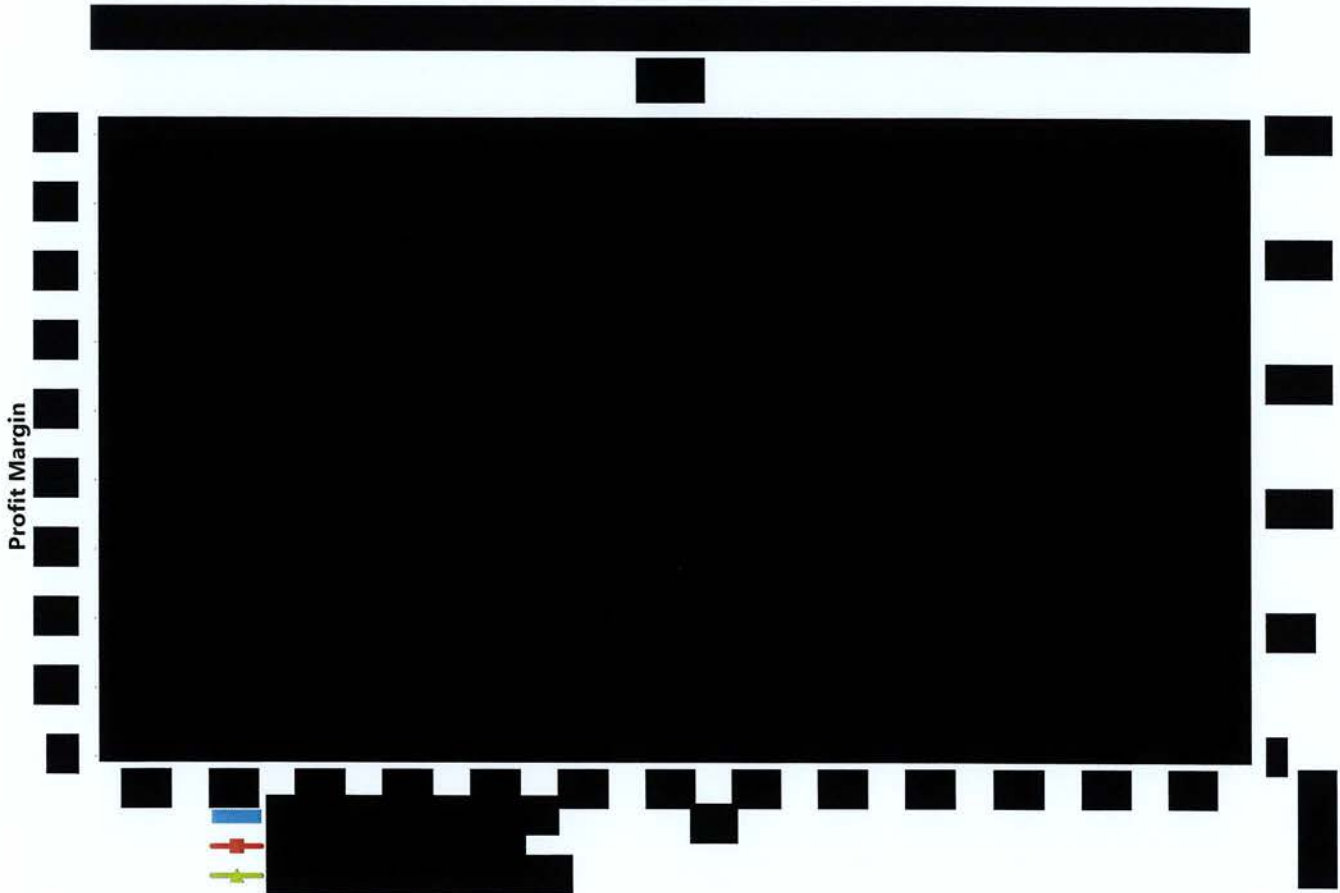
[REDACTED] See:

G Skok Letter to N Siebert, *In re Valve Antitrust Litigation*, 10/6/2023, at 11. [REDACTED]

(146) Operating margin measures how much profit a company makes after accounting for variable costs of production, such as cost of goods sold and other operating expenses such as selling, research and development, and other general and administrative costs.⁴⁰¹ [REDACTED]

[REDACTED]

[REDACTED]⁴⁰² Steam’s operating margin [REDACTED], increasing from [REDACTED] in 2021. From 2017 through 2021, Steam’s operating margin was [REDACTED]. See Attachment D-5. See the following figure for a detailed breakdown of Steam’s (adjusted) commission revenues, gross profit margins, and operating margins since 2008.



⁴⁰¹ Corporate Finance Institute Website, Operating Margin, <https://corporatefinanceinstitute.com/resources/accounting/operating-margin/> (accessed 12/15/2023).

⁴⁰² Valve, Valve P&L Statements, c. 2022 (VALVE_ANT_2755012_HIGHLY CONFIDENTIAL_ATTORNEY EYES ONLY.xlsx).
See also: Valve, Valve P&L Statements, 8/11/2023, available at Scott Lynch, Dep. Tr., 10/13/2023, Exhibit 152.

- (147) Valve’s ability to increase Steam commission revenues while [REDACTED] signifies a high degree of sustained market power. In a competitive market, the [REDACTED] [REDACTED] would create an incentive for other firms to enter the market and some of those [REDACTED] [REDACTED] would be competed away.
- (148) Valve has recognized that Steam’s profitability is an “outlier”, even amongst other powerful and successful companies across a variety of industries, including Apple, Alphabet, and Netflix, among others.⁴⁰³ Valve compared their net income per hour per employee to the likes of these other companies, and the metric for Valve is [REDACTED] any other company.⁴⁰⁴ This ratio holds when instead looking at revenue per hour per employee, with Valve estimating approximately [REDACTED] dollars in revenue per hour per employee, assuming roughly 350 full-time employees.⁴⁰⁵ Based on Valve documents, in 2021, despite Valve employing only [REDACTED], Steam made [REDACTED] in gross profits. See Attachments D-5 and D-8.
- (149) In the digital game distribution market, costs are significantly lower than the commission rates that Valve has set. Valve could still maintain Steam’s profitability—even high profitability—with lower commissions. Put differently, the high commission rates are not required for Steam to be profitable. Epic, for example, determined that its EGS platform (even when not including Fortnite revenues), would be profitable if it used a commission rate of as low as 10% or 12%, even including “influencer payouts” of 5% and payment processing costs of 2.55% coming out of EGS’s share.⁴⁰⁶ Further, Epic CEO Tim Sweeney stated that Epic

⁴⁰³ Valve, Emails between Employees re: revenue / hour / employee, 11/5/2018–11/7/2018 (VALVE_ANT_0054486–490, at VALVE_ANT_0054486).

⁴⁰⁴ Valve, Emails between Employees re: revenue / hour / employee, 11/5/2018–11/7/2018 (VALVE_ANT_0054486–490, at VALVE_ANT_0054486).

⁴⁰⁵ Valve, Emails between Employees re: revenue / hour / employee, 11/5/2018–11/7/2018 (VALVE_ANT_0054486–490, at VALVE_ANT_0054487–88).

This appears to exclude [REDACTED] and [REDACTED] contractors. See:

Valve, Emails between Employees re: revenue / hour / employee, 11/5/2018–11/7/2018 (VALVE_ANT_0054486–490, at VALVE_ANT_0054488).

Valve’s revenue per hour per employee is [REDACTED] the highest of Apple, Amazon, Google, Microsoft, Intel, Facebook, and Netflix.

[REDACTED]

See Valve, Emails between Employees re: revenue / hour / employee, 11/5/2018–11/7/2018 (VALVE_ANT_0054486–490, at VALVE_ANT_0054487, VALVE_ANT_0054489).

⁴⁰⁶ Epic, Internal Emails re: Costs of Running Diesel Business, 6/6/2018 (EPIC_VALVE_0000004–06, at EPIC_VALVE_0000004).

“learned a lot about the cost of running a digital store on PC” while rolling out Fortnite.⁴⁰⁷ Specifically, Mr. Sweeney claimed that “[t]he math is quite simple: we pay around 2.5% for payment processing for major payment methods, less than 1.5% for CON costs (assuming all games are updated as often as Fortnite), and between 1% and 2% for variable operating and customer support costs. Fixed costs of developing and supporting the platform become negligible at a large scale. In our analysis, stores charging 30% are marking up their costs by 300% to 400%.”⁴⁰⁸ As another example, according to Adam Fossa, Microsoft’s Director and General Manager of the Microsoft Store on Xbox and Windows,⁴⁰⁹ [REDACTED]
[REDACTED]
[REDACTED].⁴¹⁰ The Microsoft Store is profitable on a per-transaction basis with a commission of 12%.⁴¹¹

⁴⁰⁷ Epic, “Diesel Q&As for Tim from Embargoed Media Outlets,” c. 12/4/2018 (EPIC_VALVE_0000058–072, at EPIC_VALVE_0000059).

⁴⁰⁸ Epic, “Diesel Q&As for Tim from Embargoed Media Outlets,” c. 12/4/2018 (EPIC_VALVE_0000058–072, at EPIC_VALVE_0000059).

⁴⁰⁹ Adam Fossa, Dep. Tr. 01/29/2024, at 11:5–11.

⁴¹⁰ [REDACTED]

⁴¹¹ [REDACTED]

5. Valve’s Maintenance of Monopoly Power

5.1. Valve’s PMFN Policy

(150) Valve has adopted policies that insulate it from competition by ensuring that offers of games on Steam are in parity with offers on other competing platforms. In other words, Valve has policies that require that the offers on Steam are at least as attractive as elsewhere. Valve employees have described parity as a “platform goal,”⁴¹² a “policy,”⁴¹³ and a “practice.”⁴¹⁴ Valve ensures parity both in terms of the content included in games and prices. Valve requires all publishers that publish games on Steam to enter into an SDA,⁴¹⁵ which expressly obligates publishers to provide the same content (games, DLC, etc.) as they provide on competing platforms.⁴¹⁶ As such, Valve contractually requires content parity. Valve’s price parity policy, as discussed below, requires that publishers sell their PC content (games, DLC, etc.) on Steam at the same prices as those offered on competing platforms. In practice, the parity requirements mean that no publisher can differentiate its offerings across competing platforms, and no rival platform can compete by inducing publishers to offer a different deal to consumers purchasing/playing games on that rival. Together, Valve’s parity policies

⁴¹² Valve, Emails Regarding Price Parity, 7/23/2018–7/25/2018 (VALVE_ANT_0605887–89, at VALVE_ANT_0605887). (“We’ll never show up and ask you to undercut your customers on other stores, and we expect you’ll treat our customers with that same respect. This is a platform goal that goes beyond Steam keys[.]”)

⁴¹³ DJ Powers, Dep. Tr., 9/29/2023, at 36:23–34:6. (“Q. And my question is, is it Valve’s practice of telling publishers or discussing with publishers that if they run a discount on other stores or elsewhere, that they need to run roughly the same discount in roughly the same time period on Steam? A. Our policy is that we would like publishers to offer customers a fair deal, a similar deal to other platforms. I’d love to have the exact words to read to you, but.)

⁴¹⁴ DJ Powers, Dep. Tr., 9/29/2023, at 64:15–22 (“Q. And use the threat of not promoting them or stop selling it altogether to get them to either raise the price elsewhere or lower the price on Steam, right? A. Our practice is to have a conversation with the developer to understand why the price is lower elsewhere and see if we can figure out a way to get Steam’s price to a similar price that it is on other platforms.”)

⁴¹⁵ Valve, “Valve Corporation Steam Distribution Agreement – Online Version,” undated (VALVE_ANT_0000008–15, at VALVE_ANT_0000008), available at Erik Peterson, Dep. Tr., 11/15/2023, Exhibit 295. (Valve’s SDA: “Company [(publisher)] wishes to grant to Valve, and Valve wishes to receive, a license to use and to distribute Company’s computer applications via Steam, as set forth herein, in exchange for the compensation described herein.”)

Steam, Steamworks Partner Program, <https://partner.steamgames.com/steamdirect> (accessed 1/4/2024). (“[C]ontent you publish on Steam should of course comply with the Steam Distribution Agreement, the Steam Subscriber Agreement, Steam Online Conduct guidelines and the Steam Privacy Policy.”)

⁴¹⁶ Dark Catt, “Valve Corporation Steam Distribution Agreement,” c. 2022 (DarkCatt_0000005–27, at DarkCatt_0000010. (Section 2.4 of Valve’s SDA states: “If Company [(publisher)] distributes the Application through any other (non-Steam) distribution channel, and if Company distributes any material DLC for the Application through that other channel, it will deliver the DLC to Valve at the same time such that Steam Account Owners will receive comparable DLC with customers acquiring the Application through other channels.”)

DJ Powers, Dep. Tr., 9/29/2023, at 63:16–17. (“Q. Do you have a content parity policy? A. In the SDA, yes.”)

constitute a platform most-favored nation policy, or PMFN Policy. For further discussion on enforcement of Valve’s PMFN Policy, see Section 5.2.

5.1.1. What is a PMFN?

- (151) Most Favored Nation (“MFN”) contractual provisions, historically invoked in connection with trade between countries, are also often found in contracts between buyers and suppliers.⁴¹⁷ They are sometimes called “Most Favored Customer” provisions.⁴¹⁸ While the exact details of these provisions can differ, the common element is a requirement that one party to the transaction (*e.g.*, the seller) not offer better terms (*e.g.*, a lower price) to any other party (*e.g.*, another buyer).⁴¹⁹
- (152) At issue here is a type of MFN arrangement between a platform and a platform participant.⁴²⁰ Platform MFN, or PMFN, clauses (sometimes also known as “price parity provisions”)⁴²¹ generally require that the seller side of the platform (in this case, the game publishers) not offer the buyer side of the platform (here, game purchasers) a lower price on any other distribution channel.⁴²² Where a traditional MFN restricts the price at which a supplier can

⁴¹⁷ Legal Information Institute Website, Most Favored Nation, https://www.law.cornell.edu/wex/most_favored_nation (accessed 1/11/2024). (“Most favored nation refers to a status conferred by a clause in which a country promises that it will treat another country as well as it treats any other country that receives preferential treatment. Most favored nation clauses are frequently included in bilateral investment treaties.”)

Baker, Jonathan B. and Judith A. Chevalier (2013), “The Competitive Consequences of Most-Favored-Nation Provisions,” *Antitrust* 27(2): 20–26, at 20. (“These MFN provisions appear in a variety of commercial agreements. MFNs are a type of vertical agreement between suppliers and buyers.”)

⁴¹⁸ Baker, Jonathan B. and Judith A. Chevalier (2013), “The Competitive Consequences of Most-Favored-Nation Provisions,” *Antitrust* 27(2): 20–26, at 20. (“‘Most Favored Nation’ (MFN, also termed ‘most favored customer’) contractual provisions have come under scrutiny in recent years by antitrust authorities in both the US and the EU.”)

⁴¹⁹ Baker, Jonathan B. and Judith A. Chevalier (2013), “The Competitive Consequences of Most-Favored-Nation Provisions,” *Antitrust* 27(2): 20–26, at 20. (“Under an MFN, one party to a transaction promises to give the other party at least as favorable contractual terms as it gives any other counterparty.”)

⁴²⁰ Consolidated Second Amended Class Action Complaint, 3/23/2023, ¶¶ 156, 158. (“Valve requires that publishers offer the best price for their products on Steam, a type of ‘most favored nations’ (‘MFN’) provision. A particular type of MFN called a Platform MFN (or ‘PMFN’) occurs when an online platform requires that providers using its platform not offer their products or services at a lower price on other platforms.”; “Valve imposes such a PMFN on game publishers that list games and DLC in the Steam Store (the ‘Valve PMFN’). Like PMFNs generally, the Valve PMFN compels publishers to sell their games at the Steam Store price (or higher) in *all* distribution channels, even distribution channels that do not involve connection to or enablement for Steam.”)

⁴²¹ Baker, Jonathan B. and Fiona Scott Morton (2018), “Antitrust Enforcement Against Platform MFNs,” *Yale Law Journal* 127(7): 2176–2202, at 2177. (“Many of the online platform MFN provisions – also termed price parity provisions – investigated in Europe have been imposed on hotels by leading online travel agents (OTAs), such as Booking.com and Expedia.”)

⁴²² Baker, Jonathan B. and Fiona Scott Morton (2018), “Antitrust Enforcement Against Platform MFNs,” *Yale Law Journal* 127(7): 2176–2202, at 2178. (“A platform MFN requires that providers refrain from offering their products or services at lower prices on other platforms. The platform is thus guaranteed that no other internet distributor will charge a lower final price,

sell to a buyer’s competitors, a PMFN puts a floor on the price the seller side of the platform can charge to the buyer side of the platform *on another platform*.⁴²³ A “narrow PMFN” limits the seller from offering a lower price on its own website, while a “wide PMFN” extends this prohibition to all other platforms, including the seller’s own website.⁴²⁴

- (153) Economists have found that PMFN provisions can lead to increased platform fees and consumer prices.⁴²⁵ That finding is robust under a variety of demand conditions: PMFNs tend to result in increased prices charged by sellers and increased fees charged by the platform.⁴²⁶ Studies have also found that PMFNs decrease incentives for competing platforms to enter, thereby leading to more concentrated markets.⁴²⁷ Boik and Corts demonstrate that PMFNs

not because the focal platform has worked to ensure that it has the lowest cost, but rather because it has contracted for competitors’ prices to be no lower.”)

Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 105. (“In the context of sellers who sell their products through intermediary platforms, a platform most-favored-nation (PMFN) clause is a contractual restriction requiring that a particular seller will not sell at a lower price through a platform other than the one with which it has the PMFN agreement.”)

⁴²³ Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 105, 108. (“In the context of sellers who sell their products through intermediary platforms, a platform most-favored-nation (PMFN) clause is a contractual restriction requiring that a particular seller will not sell at a lower price through a platform other than the one with which it has the PMFN agreement.”; “In a traditional MFN policy, one or more sellers commit to one or more buyers not to sell to other buyers at a lower price. . . . Note that a platform setting is quite different in several ways. Most notably, a PMFN clause is an agreement between a seller and a platform about prices charged by the seller to a third party—the buyer.”)

⁴²⁴ Baker, Jonathan B. and Fiona Scott Morton (2018), “Antitrust Enforcement Against Platform MFNs,” *Yale Law Journal* 127(7): 2176–2202, at 2178. (“Platform MFNs are labeled ‘wide’ if they constrain the price on all other platforms, including the provider’s own website (if any). In contrast, platform MFNs are considered ‘narrow’ if they prevent the provider from setting a lower price on its own website, while leaving prices on other platforms unrestricted.”)

⁴²⁵ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *Journal of Law and Economics* 59(1): 105–134, at 128. (“We show that PMFN agreements tend to raise fees charged by platforms and prices charged by sellers[.]”)

⁴²⁶ See, for example:

Johnson, Justin P. (2017), “The Agency Model and MFN Clauses,” *Review of Economic Studies* 84(300): 1151–1185, at 1167. (“I show how price-parity clauses can raise retail prices and harm consumers.”)

⁴²⁷ See for example:

Rogerson, William P. and Howard Shelanski (2020), “Antitrust Enforcement, Regulation, and Digital Platforms,” *University of Pennsylvania Law Review* 168: 1911–1940, at 1938. (“The second type of behavior is the use of most favored nation clauses (MFN) that make it more difficult for potential competitors to challenge the dominant provider. For example, in the case of platforms that help businesses reach customers (such as a travel site that lists hotel accommodations), a MFN by a dominant platform that prohibits businesses from offering better terms on other platforms can limit the ability of potential competitors to challenge the incumbent.”)

Ezrachi, Ariel (2015), “The Competitive Effects of Parity Clauses on Online Commerce,” *European Competition Journal*, 11(2–3): 488–519, at 501, 519. (“The anticompetitive effects described above have been central to the analysis of wide MFNs worldwide. Indeed, a review of the main decisions by competition agencies reveals a consensus as to the possible harmful effects which wide MFNs combined with an agency model may generate. The most publicised case which involved wide MFNs, and was pursued on both sides of the Atlantic, concerned Apple’s use of wide parity in its iBooks Store.” Price

discourage entry of platforms that are downwardly differentiated (*i.e.*, employing a low-cost strategy).⁴²⁸ This is an intuitive result; a platform intending to compete on cost with an incumbent platform that utilizes PMFNs will face a challenge to attract customers through its primary advantage: lower prices. See further discussion in Section 7.2.1.

5.1.2. Valve’s PMFN Policy

- (154) Valve’s PMFN Policy includes two elements: content parity and price parity. The content parity element requires that publishers provide the same or better game content on Steam than elsewhere. Similarly, the price parity element requires that publishers offer the same or better price on Steam than elsewhere. Valve communicates the PMFN Policy to the market through its contracts and documentation with game publishers, its communications directly with publishers, and its enforcement efforts communicated through statements and other acts. I discuss these points in further detail below.
- (155) Section 2.4 of Valve’s SDA requires that if a publisher distributes a game “through any other (non-Steam) distribution channel, and if [publisher] distributes any material DLC for the Application [(game)] through that other channel, it will deliver the DLC to Valve at the same time such that Steam Account Owners will receive comparable DLC with customers acquiring the Application [(game)] through other channels.”⁴²⁹ Section 2.1 of the SDA also requires that localized versions and game updates be delivered to Valve “when available, but in no event later than they are provided to any other third party.”⁴³⁰ Section 2.4 of the SDA stipulates that the publisher “is free to offer special and unique promotional content” on other platforms

parity clauses “may lead to a restriction of competition through excessive intermediation and price uniformity and they may also limit low cost entry.”)

⁴²⁸ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *Journal of Law and Economics* 59(1): 105–134, at 128. (“We also show that the adoption of a PMFN agreement by an incumbent platform can discourage entry by another platform if it is sufficiently downward differentiated[.]”)

See Section 7.2.1 for further discussion.

⁴²⁹ See, for example:

Valve, SDA with [REDACTED], 1/1/2015 (VALVE_ANT_0020270–86, at VALVE_ANT_0020272). (See Section 2.4 of the Agreement.)

Valve, SDA with [REDACTED], 6/4/2015 (VALVE_ANT_0023003–21, at VALVE_ANT_0023006). (See Section 2.4 of the Agreement.)

⁴³⁰ See, for example:

Valve, SDA with [REDACTED], 1/1/2015 (VALVE_ANT_0020270–86, at VALVE_ANT_0020272). (See Section 2.1 of the Agreement.)

Valve, SDA with [REDACTED], 6/4/2015 (VALVE_ANT_0023003–21, at VALVE_ANT_0023006). (See Section 2.1 of the Agreement.)

as long as “material parity is maintained between Steam Account Owners and users of other distribution channels who make a comparable investment in the Application [(PC games)] and the associated DLC.”⁴³¹

- (156) Members of the Steam Business Team, the team within Valve that enforces the PMFN, confirm that Sections 2.1 and 2.4 of the SDA are about content parity.⁴³² For example, Steam’s Business Team has instructed developers: “We ask that digital content you offer outside of Steam be made available to Steam users directly so that the Steam version is not disadvantaged.”⁴³³ One Steam employee responsible for providing this instruction to developers (Augusta Butlin) testified that the instruction is consistent with her communications with developers about “the spirit of the SDA.”⁴³⁴ Steam’s Business Team has also conveyed that delays in updating content on Steam constitute a content parity violation: “It’s not OK to launch a DLC on your own or other stores, and then bring it to Steam some weeks or months later.”⁴³⁵ These content parity provisions are generally uniform across Valve’s SDAs.⁴³⁶
- (157) Valve also enforces price parity as part of its PMFN Policy. This policy is clearly articulated to publishers requesting Steam Keys. When a publisher requests Steam Keys, it must agree to three commitments.⁴³⁷ Specifically:

⁴³¹ Valve, “Steam Distribution Agreement – Online Version,” 10/15/2018 (VALVE_ANT_0029429–47, at VALVE_ANT_0029430, VALVE_ANT_0029432). (See Section 2.4 of the Agreement.)

Kassidy Gerber, Dep. Tr., 10/5/2023, at 59:21–25. (“So we have a parity clause in our SDA because we don’t want to have a worse version of the game, we want to make sure that the thing that we’re offering on Steam is as good as any other PC version that’s available out there.”)

⁴³² Valve, Emails Regarding Content Parity, 10/2/2015–10/7/2015 (VALVE_ANT_0215669–70, at VALVE_ANT_0215669). (In an email from Tom Giardino to ██████████, Mr. Giardino said that “[i]n our business agreement, we specify that Company ██████████ will deliver to Vavle [sic] any application updates when available, and no later than they are provided to any other distribution service. And we include DLC in that description. (that’s section 2, specifically 2.1 and 2.4, if you need the reference).”)

⁴³³ Augusta Butlin, Dep. Tr., 10/11/2023, at 212:19–213:18 (“Q. You wrote: We ask that digital content you offer outside of Steam be made available to Steam users directly so that the Steam version is not disadvantaged. Did I read that correctly? A. Yes. . . .”).

⁴³⁴ Augusta Butlin, Dep. Tr., 10/11/2023, at 212:19–213:18 (“Q. Is there anything that you see in that sentence that I just quoted that is not consistent with how you have communicated with developers about the spirit of the SDA? A. I, when working with partners, want to make sure that Steam users were treated fairly. This sentence is somewhat in that vein.”)

⁴³⁵ Valve, Emails Regarding Content Parity, 10/2/2015–10/7/2015 (VALVE_ANT_0215669–70, at VALVE_ANT_0215669).

⁴³⁶ Kassidy Gerber, Dep. Tr., 10/5/2023, at 80:5–7. (“Q. Aren’t the SDAs relatively uniform in terms of the material parity requirement? A. Yes.”)

⁴³⁷ Valve Corporation’s Responses and Objections to Plaintiffs’ First Set of Requests for Admission, 11/30/2023, at Response to Request for Admission No. 72. (“Valve admits that currently when Steam Partners request Steam Keys they are shown

- a. “I understand that I need to sell my game on other stores in a similar way to how I am selling my game on Steam. I agree that I am not giving Steam customers a worse deal.”⁴³⁸
- b. “I understand that while it’s OK to run a discount on different stores at different times, I agree to give the same offer to Steam customers within a reasonable amount of time.”⁴³⁹
- c. “I understand that if I request an extreme number of keys and I’m not offering Steam customers a fair deal, or if my sole business is selling Steam keys and not offering value to Steam customers, my request may be denied and I may lose the privilege to request keys.”⁴⁴⁰

(158) The vast majority of publishers offering games on Steam—[REDACTED]—have utilized Steam Keys.⁴⁴¹ Thus, the overwhelming majority of publishers on Steam have been exposed to the price parity obligation. Although these commitments are made as part of the process for requesting Steam Keys and the third commitment is limited to Steam Keys, the language of the first two commitments is *not* limited to Steam Keys. Valve has conveyed to publishers that it expects them to abide by the commitments in this form regardless of whether Steam Keys are at issue.⁴⁴²

the following message related to the use of Steam Keys and asked to acknowledge it before their Steam Key request may be submitted”)

Tom Giardino, Dep. Tr., 11/2/2023, at 149:10–14. (“Q. And any time that someone requests Steam keys, this -- there’s a pop-up where they have to agree to three statements confirming their understanding of certain policies at Valve? A. Yes. That’s correct.”)

⁴³⁸ Valve, Emails Regarding Steam Key Guidelines, 6/28/2018–7/3/2018 (VALVE_ANT_0605087–89, at VALVE_ANT_0605087), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 186.

Valve, Emails Regarding Steam Key Request, 1/17/2019–1/30/2019 (VALVE_ANT_0452901–911, at VALVE_ANT_0452906–907).

⁴³⁹ Valve, Emails Regarding Steam Key Guidelines, 6/28/2018–7/3/2018 (VALVE_ANT_0605087–89, at VALVE_ANT_0605087), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 186.

Valve, Emails Regarding Steam Key Request, 1/17/2019–1/30/2019 (VALVE_ANT_0452901–911, at VALVE_ANT_0452906–907).

⁴⁴⁰ Valve, Emails Regarding Steam Key Guidelines, 6/28/2018–7/3/2018 (VALVE_ANT_0605087–89, at VALVE_ANT_0605087), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 186.

Valve, Emails Regarding Steam Key Request, 1/17/2019–1/30/2019 (VALVE_ANT_0452901–911, at VALVE_ANT_0452906–907).

⁴⁴¹ Valve Transaction Data, 3/11/2004–12/31/2022. See: “03_Keys.R.”

Of the publishers in Valve’s transaction data, [REDACTED] are associated with at least one Steam Key activation. Those publishers are associated with [REDACTED] of revenue in Valve’s transaction Data.

⁴⁴² Valve, Emails Regarding Steam Key Guidelines, 6/28/2018–7/3/2018 (VALVE_ANT_0605087–89, at VALVE_ANT_0605087), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 186. (After making this statement of the price parity requirement, clearly not limited to Steam Keys, Tom Giardino sent a screenshot of the three commitments in the Steam Key request form: “[W]e wouldn’t be OK with selling games on Steam if they are available at better prices on other stores, even if they didn’t use Steam keys. If you wanted to sell a non-Steam version of your game for \$10 at retail and \$20 on Steam, we’d ask to get that same lower price or just stop selling the game on Steam if we couldn’t treat our customers fairly.”)

- (159) Valve also reiterates the price parity portion of its PMFN Policy is in its Steamworks Documentation’s “Steam Key Rules and Guidelines,” which require publishers to use Steam Keys to sell their games “on other stores in a similar way to how you sell your game on Steam. It is important that you don’t give Steam customers a worse deal than Steam Key purchasers [on other stores].”⁴⁴³ For example, publishers would not be allowed to give away free games on other stores, unless they offer the same deal to Steam customers; similarly, publishers can discount Steam Keys “on different stores at different times as long as [they] plan to give a comparable offer to Steam customers within a reasonable amount of time.”⁴⁴⁴
- (160) Valve communicates to publishers that the price parity requirement applies equally to Steam Key and non-Steam Key transactions and enforces that requirement as such. For example, a member of the Steam Business Team summarized the policy in a May 2017 email to a publisher as follows: “Do-able: Sell the same content and make sure the price on Steam is competitive with where it’s being sold anywhere else (using keys or not, in a bundle or not). Not doable: Sell the content to another store at a better price than Steam customers get (using keys or not, in a bundle or not).”⁴⁴⁵ See Section 5.2.2 for further discussion of Valve’s communications that the price parity requirement is not limited to Steam Keys.
- (161) Publishers are also aware that Valve’s parity requirements for Steam Keys apply more generally to pricing. Valve has repeatedly explained to publishers that it could choose to stop selling non-compliant games. For example, in a March 2013 email to a publisher named ██████████, Valve explained that its parity requirement applies regardless of whether Steam Keys are at issue: “If your long term strategy is to sell the game super cheap, that’s fine. But constantly offering your products at way better prices on other stores isn’t OK, whether you

⁴⁴³ Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 1/30/2024). (Emphasis in original).

⁴⁴⁴ Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 1/30/2024). (“Steam Keys shouldn’t be given away for free if you aren’t also offering the same deal (i.e., give the game away for free) to Steam customers. This includes giveaways for promotional purposes, unless that giveaway is very small (under 100 Steam Keys).”; “It’s OK to run a discount for Steam Keys on different stores at different times as long as you plan to give a comparable offer to Steam customers within a reasonable amount of time.”)

⁴⁴⁵ Valve, Emails Regarding ██████████, 5/18/2017–5/23/2017 (VALVE_ANT_0598921–25, at VALVE_ANT_0598921, VALVE_ANT_0598923), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 55. (“Do-able: Sell the same content and make sure the price on Steam is competitive with where it’s being sold anywhere else (using keys or not, in a bundle or not). Not doable: Sell the content to another store at a better price than Steam customers get (using keys or not, in a bundle or not).” “Even if the content isn’t even being sold via Steam keys, we generally just choose not to sell games/DLC if we’re not getting the same prices as other stores[.]”)

DJ Powers, Dep. Tr., 9/29/2023, at 40:25–42:1. (Acknowledging statements of Mr. Giardino and agreeing that he is centrally involved in these sorts of pricing discussions.)

use Steam keys or not.⁴⁴⁶ Valve threatened to delist games on Steam at higher prices than on other stores: “We just opt to stop selling games if partners don’t treat our customers fairly.”⁴⁴⁷

(162) Valve also communicated the price parity portion requirement applies to foreign transactions in foreign currencies. The “FAQ” portion of the announcement discussed Valve’s “suggested pricing matrix,” which recommends relative prices across currencies.⁴⁴⁸ That is, based on the price that a publisher intends to set for a game in the United States, this tool recommends how the game should be priced in other countries. One of the questions in the FAQ section of this announcement asks the following: “Am I required to use Steam’s suggested pricing?” The answer contains the phrase: “Just make sure that you’re not disadvantaging Steam customers.”⁴⁴⁹ In other words, the publisher must not offer the game at a lower price or provide more/different content on a different platform than on Steam, even across geographies and currencies.

(163) A draft version of this announcement was circulated internally among Valve employees in July 2015.⁴⁵⁰ In addition to having the same language as the final announcement, the draft version of the announcement included a specific example: “Just make sure that you’re not disadvantaging Steam customers; [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]⁴⁵²

(164) Valve reiterated this point in a June 2018 email to a publisher named [REDACTED]: “But to be clear: we wouldn’t be OK with selling games on Steam if they are

⁴⁴⁶ Valve, Emails between Valve and [REDACTED], 3/13/2018–3/14/2013 (VALVE_ANT_0263439–441, at VALVE_ANT_0263439) (emphasis added).

⁴⁴⁷ Valve, Emails between Valve and [REDACTED], 3/13/2018–3/14/2013 (VALVE_ANT_0263439–441, at VALVE_ANT_0263439) (emphasis added).

⁴⁴⁸ Valve, Emails Regarding New Currencies, 9/9/2015–9/15/2015 (VALVE_ANT_0190239–41, at VALVE_ANT_0190240), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 188.

⁴⁴⁹ Valve, Emails Regarding New Currencies, 9/9/2015–9/15/2015 (VALVE_ANT_0190239–41, at VALVE_ANT_0190240), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 188 (emphasis added).

⁴⁵⁰ Tom Giardino, Dep. Tr., 11/2/2023, at 172:17–21. (Mr. Giardino confirmed that Ex. 187 is a draft of the announcement sent to publishers in Ex. 188: “Q. Okay. And then when we look at the ‘New Currencies Coming To Steam (Action Required),’ this is a -- what appears to be a later version of what we were looking at in Exhibit 187? A. Yes.”)

⁴⁵¹ Valve, Emails Regarding New Currencies on Steam, 7/9/2015–7/24/2015 (VALVE_ANT_0114214–20, at VALVE_ANT_0114215), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 187 (emphasis added).

⁴⁵² Valve, Emails Regarding New Currencies on Steam, 7/9/2015–7/24/2015 (VALVE_ANT_0114214–20, at VALVE_ANT_0114214), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 187.

available at better prices on other stores, *even if they didn't use Steam keys*. If you wanted to sell a non-Steam version of your game for \$10 at retail and \$20 on Steam, we'd ask to get that same lower price or just stop selling the game on Steam if we couldn't treat our customers fairly."⁴⁵³ Valve confirmed this was not a new policy: "No, we've always asked that partners treat our customers fairly, and *we've often opted not to promote games or stop selling them altogether if we aren't able to get fair treatment for our users.*"⁴⁵⁴ The practical effect of the PMFN is to make sure that Steam customers have little incentive to go elsewhere to purchase and play games.

- (165) In April 2019, a publisher named ██████ asked Valve whether its parity requirement extends beyond Steam Keys (while mistakenly assuming this requirement was documented in the SDA): "I can't find the contracts. Where [is it] about selling the game on other platforms and not going cheaper than on [S]team: is this only about keys or also about selling the game independently [sic], not using Steam keys at all?"⁴⁵⁵ In response, Valve confirmed it took fundamentally the same stance regardless of whether Steam Keys are at issue: "[W]e try not to focus too much on whether the game is being sold via Steam key or not. It is a specific thing we ask people to respect when they sell keys, but we're also uninterested in operating a store that gives people bad offers- *so we just stop selling games if we aren't able to secure the equivalent price for them.*"⁴⁵⁶ Valve then gave a specific example: "(For instance if another service like Uplay or Origin was selling a game for \$15 and we were selling it for \$20, we'd ask the dev to give us that lower price or opt to not sell the game, even if the sales at the other store weren't using Steam keys.)"⁴⁵⁷
- (166) Steam publishers, including the largest publishers in the PC game industry, are aware of Valve's parity requirements.⁴⁵⁸ For example, in an internal email among Microsoft employees,

⁴⁵³ Valve, Emails Regarding Steam Key Guidelines, 6/28/2018–7/3/2018 (VALVE_ANT_0605087–89, at VALVE_ANT_0605087), available at Gabe Newell, Dep. Tr., 11/21/2023, Exhibit 349 (emphasis added).

⁴⁵⁴ Valve, Emails Regarding Steam Key Guidelines, 6/28/2018–7/3/2018 (VALVE_ANT_0605087–89, at VALVE_ANT_0605087), available at Gabe Newell, Dep. Tr., 11/21/2023, Exhibit 349 (emphasis added).

⁴⁵⁵ Valve, Emails Between ██████ and Valve, 4/12/2019–4/19/2019 (VALVE_ANT_0265435–440, at VALVE_ANT_0265439).

⁴⁵⁶ Valve, Emails Between ██████ and Valve, 4/12/2019–4/19/2019 (VALVE_ANT_0265435–440, at VALVE_ANT_0265438) (emphasis added).

⁴⁵⁷ Valve, Emails Between ██████ and Valve, 4/12/2019–4/19/2019 (VALVE_ANT_0265435–440, at VALVE_ANT_0265438) (emphasis added).

⁴⁵⁸ See, for example, testimony from Wolfire co-founder and Humble founder, Jeffrey Rosen: Jeffrey Rosen, Dep. Tr., 11/17/2023, 30:7–9, 31:6–8, 200:25–201:9. ("Q. So you were -- you testified you were a cofounder of Wolfire; correct? A. Correct."; "Q. And did you do something else after you ceased to be active as president of Wolfire? A. I was -- founded Humble Bundle."; "Q. So if you saw a game in the Humble Store and -- for delivery via key -- A. Uh-huh. Q. -- will the

one employee asks whether Steam requires price parity,⁴⁵⁹ and in response, another Microsoft employee replied “Yes – they absolutely do. . . . Its [sic] not formally listed in documentation in Steamworks, but always addressed in-person.”⁴⁶⁰ Another internal Microsoft email states:⁴⁶¹

[T]he Steam publishing agreement historically has required product and price parity. When I looked at it pre Age:DE a few years ago, I found that we could sell at any price we wanted before Steam release, but once we released on Steam we needed to give Steam price parity to our other digital channels. In the case of a GoW5 Steam/Windows Store (Garrison) simship, I’d assume Steam demands you don’t undercut them once you release on Steam.

- (167) As another example, when Valve threatened to delist a major [REDACTED] game from Steam because its price on Steam was higher relative to the retail price in [REDACTED] responded: “We’ve been thru this before.”⁴⁶²

5.1.3. Valve’s PMFN Policy is a barrier to entry

- (168) Valve imposes barriers to entry through its PMFN Policy and enforcement practices. Absent these Valve-imposed barriers, other platforms could compete for publishers to join their platforms exclusively or increase the frequency with which they multihome. Given the prevalence of comparatively lower commission rates on alternative game distribution platforms, publishers would further be incentivized to steer customers towards the distribution platform with the lowest commission rate, using lower prices or differentiated content to do so.

price be different from the price on Steam? A. Generally not. Q. Why is that? A. Steam is not happy if you sell your game at a lower price off of Steam, so developers are generally scared to do that.”)

⁴⁵⁹ Microsoft, Emails Regarding Valve’s PMFN Policy, 10/6/2020 (MSFT_VALVE_000000555–57, at MSFT_VALVE_000000557). (“Quick question for you, does Steam require price parity? I thought I remember reading that they require pricing on their stores to be at parity or lower. But can’t seem to find where I saw that.”)

⁴⁶⁰ Microsoft, Emails Regarding Valve’s PMFN Policy, 10/6/2020 (MSFT_VALVE_000000555–57, at MSFT_VALVE_000000556). (Emphasis added).

⁴⁶¹ Microsoft, Emails Regarding Valve’s Publishing Agreement, 7/10/2019–8/7/2019 (MSFT_VALVE_000000001–15, at (MSFT_VALVE_000000007).

⁴⁶² Valve, Emails Regarding [REDACTED] Issue, 6/6/2013–6/7/2013 (VALVE_ANT_0399857–59, at VALVE_ANT_0399858), available at Nathaniel Blue, Dep. Tr., 10/4/2023, Exhibit 81.

Other documents indicate that Valve may try to limit the appearance of its parity requirements in formal documentation because of concerns about antitrust risk. See, for example:

Valve, Emails Regarding New Currencies on Steam, 7/9/2015–7/24/2015 (VALVE_ANT_0114214–20, at VALVE_ANT_0114214), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 187. (In a series of emails regarding a draft of an announcement about pricing in foreign currency, Mr. Giardino wrote: [REDACTED])

- (169) Valve requires publishers on Steam to abide by its PMFN Policy, which constrains publishers from pricing a game differently or providing different content across platforms. Valve restrains publishers' ability to set game prices and release content for games on other platforms. The PMFN Policy reduces publishers' ability to increase both sales and revenues by providing different prices and/or content across platforms as a way of attracting customers to those platforms. This limits the ability of competing platforms to grow and be effective competitors to Steam.
- (170) Consider, for example, a publisher who offers a game on both Steam and an alternative distribution platform and would like to offer lower pricing on another platform. Assume the publisher's effective commission rate is 30% for sales on Steam and 12% for sales on the alternative distribution platform. This difference in commission rates may create an incentive for the publisher to charge a lower price on the alternative platform to drive interest and sales, as it can maintain revenue levels given it retains a larger share of revenues on each sale on that platform. So, if the price for the game on Steam is \$10, the publisher could earn equal revenues on the alternative distribution platform by pricing the game at \$7.95.⁴⁶³ Applying basic economic principles to this hypothetical situation results in the conclusion that the publisher could both (a) sell more copies of its game on the alternative distribution platform by offering a lower price and (b) earn more or equivalent revenues for any sale on the alternative distribution platform when compared to an identical sale on Steam.
- (171) Valve's PMFN Policy prevents publishers from engaging in this pricing behavior, hampering rival platforms' ability to compete with Steam. Competition on price is one important avenue for potential platforms to compete on the merits, gain interest from consumers and developers, and grow user base volume on both sides of their platforms. In the absence of meaningful price competition, a rival platform must employ other methods to differentiate itself from Steam. One such example could be to provide different content on platforms other than Steam to entice customers. However, the PMFN Policy restricts that competition, as well. Steam is the dominant platform in the relevant market in terms of publishers and users. Without a significant portion of PC gamers transacting with alternative distribution platforms, multihoming by developers cannot produce meaningful constraints for Valve. A publisher who lists a game on Steam and alternative distribution platforms is likely to make the majority of its sales on Steam, since users are not incentivized by prices to multihome.

⁴⁶³ $(\$10 \times (1 - 30\%)) / (1 - 12\%) \approx \7.95 .

- (172) Without their ability to compete on price and/or content, those platforms will not be able to attract users away from Steam. Without a large user base, those platforms will not be able to attract publishers away from Steam, even with lower priced commission structures. As such, Valve’s PMFN Policy and active enforcement acts as an additional barrier to entry for other platforms to enter the market and compete effectively with Steam.

5.2. Enforcement of the PMFN Policy

- (173) Valve enforces its PMFN Policy on both pricing and content to ensure parity on Steam. Valve maintains its monopoly power and deters potential competing platforms from entering and competing effectively in the relevant market with this continued enforcement of the PMFN Policy.

5.2.1. Valve’s early enforcement of the PMFN Policy

- (174) Valve’s Steam Business Team is responsible for implementing and enforcing its PMFN Policy, including detecting violations of the PMFN Policy.⁴⁶⁴ When that occurs, the Steam Business Team typically reaches out to the game publisher to start a “conversation” about the discrepancy.⁴⁶⁵ Steam Business team member DJ Powers testified that it was Valve’s practice

⁴⁶⁴ Tom Giardino, Dep. Tr., 11/2/2023, at 15:21–18:6. (“Q. Okay. Understanding it’s approximate, when -- are we talking about communicating with publishers about pricing issues? A. Pricing could be among the topics discussed. Q. Okay. Is it one of the topics that you discuss with publishers over the years as being part of the Steam business team? A. Yes. Q. Okay. How about content issues? What content is being made available by publishers on Steam? A. I’m not sure what you’re asking about the content. I’m sorry. Q. Well, the -- well, let me ask you. In your communications with publishers over the years, have you had conversations with them about what content they make available on the Steam platform? A. Yes. Q. And have you had conversations with them about the need to make the same content available on their version of the game sold on Steam as they do elsewhere? A. That wouldn’t come up frequently, but, yes, it has come up. Q. Okay. And in the dozen or so people, approximately, that communicate with publishers regularly, have you had conversations with them about the need to ensure that publishers are making the same basic content available on Steam as they do on other -- in other locations? A. Yes. Q. Okay. And have you had conversations with that dozen or so approximate people about the publishers’ need to provide similar pricing on Steam as they do elsewhere? A. That wouldn’t be a common topic for us to discuss, but it has come up over the years, yes. Q. You’ve specifically spoken with other people within Steam about the fact that publishers need to offer similar prices on Steam as they do elsewhere; right? A. Yes. Q. Okay. And you’ve discussed with them that this is not limited to situations where the publishers are offering games for sale via Steam keys but just period; right? A. Yes. . . . Q. So since you joined the company back -- back in 2012, have you consistently been among the group of people that regularly communicates with publishers about Steam business issues? A. Yes, I have.”)

For examples of Valve’s Steam Business Team detecting PMFN Policy violations, see:

Valve, Emails Regarding ██████████ Pricing, 11/11/2013–11/12/2013 (VALVE_ANT_0130574), available at Matt Nickerson, Dep. Tr., 11/20/2023, Exhibit 337.

Valve, Emails Regarding ██████████, 12/24/2012–12/25/2012 (VALVE_ANT_0294967–972), available at Gabe Newell, Dep. Tr., 11/21/2023, Exhibit 366.

⁴⁶⁵ DJ Powers, Dep. Tr., 9/29/2023, at 63:18–64:22.

to initiate such a “conversation” when Steam believed that a “game [was] being sold on another platform for a lower price.”⁴⁶⁶

- (175) Evidence suggests that Valve began enforcing price parity at least as early as 2009. In November 2009, [REDACTED] was preparing to release a major game—[REDACTED]—that coincided with [REDACTED].⁴⁶⁷ In emails between [REDACTED] and Valve, Valve personnel noticed other stores—notably [REDACTED]—were offering lower prices to customers purchasing [REDACTED].⁴⁶⁸ Alden Kroll, a member of the Steam Business Team, reached out to [REDACTED], stating:⁴⁶⁹

We see that [REDACTED] street price for [REDACTED] appears to be [REDACTED] lower than you are asking us to sell the game for, Both [REDACTED] are selling for [REDACTED]. Can we get closer to this price on Steam? We're happy to show [REDACTED] as the suggested price grayed out with a price of [REDACTED] next to it. We don't need to be the cheapest option, but we need to at least be close to what customers can get the game for everywhere else.

- (176) [REDACTED] wrote back and explained “it will not be possible for [REDACTED] to change the price” on the alternative stores.⁴⁷⁰ Steam Business Team member Jason Holtman explained that, in response, Valve will “opt not to carry or market [REDACTED] in [REDACTED] on Steam.”⁴⁷¹ Valve later internally confirmed that “[REDACTED] will not launch in [REDACTED]”⁴⁷²

⁴⁶⁶ DJ Powers, Dep. Tr., 9/29/2023, at 63:24–64:7. (“Q. What about a practice? Let's not go with the official term “policy,” but is there a practice at Valve of often opting not to promote games or stop selling them altogether if they're sold for less elsewhere? A. In the rare occurrences where we're made aware that the game is being sold on another platform for a lower price, our practice is to have a conversation with the publisher.”)

Jane Lo, Dep. Tr., 11/28/2023, at 24:24–25:6. (“Q. What is a Steam account manager? A. It's the Steam business team. Q. Who's on the Steam business team? A. I may not recall all of them, but I can name a few. Q. A few is a good start. A. Okay. DJ Powers, Augusta Butlin, Connor Malone.”)

⁴⁶⁷ Valve, Emails Regarding [REDACTED] on Steam, 11/9/2009–11/30/2009 (VALVE_ANT_2790480–86), available at Jason Ruymen, Dep. Tr., 9/19/2023, Exhibit 1.

⁴⁶⁸ Valve, Emails Regarding [REDACTED] on Steam, 11/9/2009–11/30/2009 (VALVE_ANT_2790480–86, at VALVE_ANT_2790484), available at Jason Ruymen, Dep. Tr., 9/19/2023, Exhibit 1.

⁴⁶⁹ Valve, Emails Regarding [REDACTED] on Steam, 11/9/2009–11/30/2009 (VALVE_ANT_2790480–86, at VALVE_ANT_2790484), available at Jason Ruymen, Dep. Tr., 9/19/2023, Exhibit 1.

⁴⁷⁰ Valve, Emails Regarding [REDACTED] on Steam, 11/9/2009–11/30/2009 (VALVE_ANT_2790480–86, at VALVE_ANT_2790483), available at Jason Ruymen, Dep. Tr., 9/19/2023, Exhibit 1.

⁴⁷¹ Valve, Emails Regarding [REDACTED] on Steam, 11/9/2009–11/30/2009 (VALVE_ANT_2790480–86, at VALVE_ANT_2790483), available at Jason Ruymen, Dep. Tr., 9/19/2023, Exhibit 1.

⁴⁷² Valve, Emails Regarding [REDACTED] on Steam, 11/9/2009–11/30/2009 (VALVE_ANT_2790480–86, at VALVE_ANT_2790480), available at Jason Ruymen, Dep. Tr., 9/19/2023, Exhibit 1.

- (177) Delisting a game from Steam is a powerful enforcement mechanism. In this example with [REDACTED], delisting [REDACTED] resulted in the loss of all [REDACTED] sales. Valve was willing to completely remove the [REDACTED] title in [REDACTED], opting to forego the 30% commission Valve would have collected on [REDACTED] sales in order to enforce Valve’s price parity policy.
- (178) In the several years following Valve’s delisting of [REDACTED] games continued to be sold at lower prices on other platforms than on Steam, and Valve continued to enforce its PMFN Policy against [REDACTED] as a result. In a series of emails in March 2010, Valve notified [REDACTED] that [REDACTED] games [REDACTED] and [REDACTED] games [REDACTED] would not be offered on Steam in [REDACTED] “because they are not competitively priced[.]”⁴⁷³ In the same email chain, Valve began referring to the phenomenon of publishers offering lower prices on other platforms as the “[REDACTED] pricing issue.”⁴⁷⁴ Valve took the position that allowing lower prices on other platforms would mean that Valve is “essentially advertising to [its] customers that Steam is not competitive with regular price.”⁴⁷⁵
- (179) In March 2014, [REDACTED] wrote to Valve and explained that retailers in [REDACTED] were attempting to price lower in order to be “cheaper than their competitor,” *i.e.*, Steam.⁴⁷⁶ [REDACTED] explained that they “are not responsible” for this strategy and that “pricing in [REDACTED] has been historically very aggressive[.]”⁴⁷⁷ [REDACTED] proposed that if Valve wanted to control pricing in

⁴⁷³ Valve, Emails Between Valve and [REDACTED] Regarding [REDACTED] and [REDACTED], 4/10/2010–4/20/2010 (VALVE_ANT_2790580–83, at VALVE_ANT_2790583). (“I wanted to bring the following press inquiries and articles to your attention regarding [REDACTED] and [REDACTED] not being for sale in [REDACTED] on Steam. As we’ve discussed, we are not offering those two titles in [REDACTED] because they are not competitively priced at street price of 29.99 GBP-- [REDACTED] would like a minimum price to Steam that would mean we would have to sell at 34.99 GBP while street price is 26.99–29.99[.]”)

⁴⁷⁴ Valve, Emails Between Valve and [REDACTED] Regarding [REDACTED] and [REDACTED], 4/10/2010–4/20/2010 (VALVE_ANT_2790580–84, at VALVE_ANT_2790580). (“[Y]ou’re right that we are both definitely trying to find a solution for [REDACTED] pricing issue.”)

⁴⁷⁵ Valve, Emails Between Valve and [REDACTED] Regarding [REDACTED] and [REDACTED], 4/10/2010–4/20/2010 (VALVE_ANT_2790580–84, at VALVE_ANT_2790580). (“As we’ve discussed, we are not asking you to advantage us over other retailers. We are merely making a choice about carrying and marketing product through Steam. If the price is too high, then we can’t offer the product without essentially advertising to our customers that Steam is not competitive with regular price.”)

⁴⁷⁶ Valve, Emails Regarding [REDACTED] Market, 3/25/2014–4/25/2014 (VALVE_ANT_2714185–87, at VALVE_ANT_2714187), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 246. (“As we mentioned during the meeting the situation in [REDACTED] is due to retailers strategies to take on their own margin for being cheaper than their competitor.”)

⁴⁷⁷ Valve, Emails Regarding [REDACTED] Market, 3/25/2014–4/25/2014 (VALVE_ANT_2714185–87, at VALVE_ANT_2714186–87), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 246. (“As [REDACTED] mentioned to you the pricing in this country has been historically very aggressive and our local teams work hard to defend higher prices.”; “As we mentioned during the meeting the situation in [REDACTED] is due to retailers strategies to take on their own margin for being cheaper than their competitor. This is a Death game that will end by the bankrupt of the weakest players (like [REDACTED] among others in the past). We are not responsible of this and we obviously understand your feeling. We share it as it has impact all [REDACTED] digital sales and not only the ones through the Steam platform.”)

██████████, it would provide Valve “with [wholesale price] in ██████████ for each ██████████ title sold in this market so that you can apply the [recommended retail price] of your choice.”⁴⁷⁸ Valve did not agree to ██████████ suggested compromise and responded that Valve will not “reduce [its] margin in order to match prices of other retailers engaged in a battle over price.”⁴⁷⁹

- (180) Additionally, Valve blocked ██████████ from selling yet another title, ██████████, on Steam in ██████████, as to “not compete in the price war.”⁴⁸⁰ In a 2014 email, Valve explained to ██████████ that it would not launch the game since “there is still a conversation going on in regards to pricing for ██████████.”⁴⁸¹ Valve informed ██████████ that it will “wait to the list the game until the pricing on Steam can be more in line with what customers have access to through other outlets [in ██████████].”⁴⁸² Additionally, in the same year, Valve noted that ██████████ had advertised another two games, ██████████ and ██████████, on other platforms in ██████████ for around 20% lower than the Steam price.⁴⁸³ In response to this price difference,

⁴⁷⁸ Valve, Emails Regarding ██████████ Market, 3/25/2014–4/25/2014 (VALVE_ANT_2714185–87, at VALVE_ANT_2714187), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 246. (“In order to give you the ability to take your own decision on that particular territory we can work on an addendum to our distribution agreement. That way we would provide you with WSP in ██████████ for each ██████████ title sold in this market so that you can apply the RRP of your choice. This is up to you to tell us if you want ██████████ to proceed that way.”)

⁴⁷⁹ Valve, Emails Regarding ██████████ Market, 3/25/2014–4/25/2014 (VALVE_ANT_2714185–87, at VALVE_ANT_2714185), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 246. (“Our position on pricing will remain the same – we won[']t reduce our margin in order to match prices of other retailers engaged in a battle over price.”)

⁴⁸⁰ Valve, Emails Regarding ██████████, 4/4/2014–4/8/2014 (VALVE_ANT_0046752–55, at VALVE_ANT_0046752), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 247. (“[O]n Steam, we'll choose not to list the game in ██████████ so as 'to not compete in the price war'. We completely understand the issues presented at retail in ██████████, but for us it's important to have a price that is competitive. In instances where that's not possible, we'll wait to list the game until the pricing on Steam can be more in line with what customers have access to through other outlets.”)

⁴⁸¹ Valve, Emails Regarding ██████████, 4/4/2014–4/8/2014 (VALVE_ANT_0046752–55, at VALVE_ANT_0046753), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 247. (“I believe there is still a conversation going on in regards to pricing for ██████████. When that is all settled, the game should be made available in ██████████.”)

⁴⁸² Valve, Emails Regarding ██████████, 4/4/2014–4/8/2014 (VALVE_ANT_0046752–55, at VALVE_ANT_0046752), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 247. (“[O]n Steam, we'll choose not to list the game in ██████████ so as 'to not compete in the price war'. We completely understand the issues presented at retail in ██████████, but for us it's important to have a price that is competitive. In instances where that's not possible, we'll wait to list the game until the pricing on Steam can be more in line with what customers have access to through other outlets.”)

⁴⁸³ Valve, Emails Regarding ██████████, 8/5/2014 (VALVE_ANT_2573683–84, at VALVE_ANT_2573684), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 248. (“We also have a few sticking points in the relationship [with ██████████] right now, which include: . . . ██████████ pricing – they listed ██████████ and ██████████ on Steam for about 20% higher in ██████████ than on other platforms. In response, we took these games off sale in ██████████ until pricing is comparable. In the past, their argument has been that ██████████ have been in a price war, and are eating their own margins to reduce the price. They offered to have us eat our margin, and we declined and kept the games off the store. In the end, they brought pricing to parity.”)

Valve again removed “[those] games off sale in [REDACTED] until pricing [was] comparable.”⁴⁸⁴ Valve noted that, ultimately, [REDACTED] “brought pricing to parity.”⁴⁸⁵

(181) By at least 2015, Valve was also frequently enforcing the PMFN Policy against publishers other than [REDACTED]. A 2015 internal Valve email by DJ Powers, which included a group email address encompassing all members of the Steam Business Team, explained that Valve had just enforced the PMFN Policy against [REDACTED] based on the price of another major game, [REDACTED]: “We’re going to remove the purchase offer for [REDACTED] today. We’ve asked [REDACTED] to list a competitive price to what we’re seeing at other retail outlets, and they’ve said they are unable to do so.”⁴⁸⁶ Mr. Powers also explained that the same type of enforcement occurred against another publisher, [REDACTED]: “The [REDACTED] is in a similar position, and Ricky is talking through solutions with [REDACTED].”⁴⁸⁷ Finally, Mr. Powers noted “I checked through our upcoming AAA titles and we appear to be priced competitively to retail on everything else.”

(182) As another example, [REDACTED] noted that [REDACTED] retailers were attempting to offer [REDACTED] at a lower price than Steam in 2015: “The problem with the pricing has been caused by some retailers in [REDACTED] attempting to undercut and run [REDACTED] as a loss leader[.]”⁴⁸⁸ Despite [REDACTED] assurance that it was not “offering [REDACTED] retailers] a reduced [wholesale sales price] in order for them to go out at these lower price[.]” Valve pressed [REDACTED] “to update the offering on Steam so it is comparable to other offerings, whether by price or content[.]”⁴⁸⁹ After further pushback from [REDACTED],

⁴⁸⁴ Valve, Emails Regarding [REDACTED], 8/5/2014 (VALVE_ANT_2573683–84, at VALVE_ANT_2573684), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 248. (“We also have a few sticking points in the relationship [with [REDACTED]] right now, which include: . . . [REDACTED] pricing – they listed [REDACTED] and [REDACTED] on Steam for about 20% higher in [REDACTED] than on other platforms. In response, we took these games off sale in [REDACTED] until pricing is comparable. In the past, their argument has been that [REDACTED] have been in a price war, and are eating their own margins to reduce the price. They offered to have us eat our margin, and we declined and kept the games off the store. In the end, they brought pricing to parity.”)

⁴⁸⁵ Valve, Emails Regarding [REDACTED], 8/5/2014 (VALVE_ANT_2573683–84, at VALVE_ANT_2573684), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 248. (“We also have a few sticking points in the relationship [with [REDACTED]] right now, which include: . . . [REDACTED] pricing – they listed [REDACTED] and [REDACTED] on Steam for about 20% higher in [REDACTED] than on other platforms. In response, we took these games off sale in [REDACTED] until pricing is comparable. In the past, their argument has been that [REDACTED] have been in a price war, and are eating their own margins to reduce the price. They offered to have us eat our margin, and we declined and kept the games off the store. In the end, they brought pricing to parity.”)

⁴⁸⁶ Valve, Emails Regarding [REDACTED] Price Parity, 9/22/2015–10/1/2015 (VALVE_ANT_0051718–19, at VALVE_ANT_0051718).

⁴⁸⁷ Valve, Emails Regarding [REDACTED] Price Parity, 9/22/2015–10/1/2015 (VALVE_ANT_0051718–19, at VALVE_ANT_0051718).

⁴⁸⁸ Valve, Emails Regarding Distribution for [REDACTED], 7/17/2015–7/24/2015 (VALVE_ANT_0340706–13, at VALVE_ANT_0340709–11).

⁴⁸⁹ Valve, Emails Regarding Distribution for [REDACTED], 7/17/2015–7/24/2015 (VALVE_ANT_0340706–13, at VALVE_ANT_0340710).

Valve stated that it “would be unable to launch [REDACTED] on Steam at the current planned price point.”⁴⁹⁰

- (183) A 2019 email from Mr. Powers further confirms the importance of [REDACTED] pricing problem” to Valve’s operations, stating that “[o]ne of the ongoing issues we struggle with is how do we react when games run significant discounts on competing stores, but do not make those discounts available on Steam[,]” which he characterizes as “[REDACTED] pricing question.”⁴⁹¹ Mr. Powers notes that, while [REDACTED] retail stores have become less of a problem for Valve, [REDACTED] and other platforms have adopted similar approaches.⁴⁹² Mr. Powers explains that Valve’s response “when games run significant discounts on competing stores, but do not make those discounts available on Steam” is to reach out to the developer and ask “the partner [] to match the lower price[.]”⁴⁹³ He then outlines three potential resolutions, including that if publisher and Valve “end up in a standoff[,]” Valve would “often limit marketing of the title on Steam” until the “pricing is competitive among platforms.”⁴⁹⁴ See Figure 3.

⁴⁹⁰ Valve, Emails Regarding Distribution for [REDACTED], 7/17/2015–7/24/2015 (VALVE_ANT_0340706–13, at VALVE_ANT_0340709).

⁴⁹¹ Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–390, at VALVE_ANT_0053488–89), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45. (“One of the ongoing issues we struggle with is how do we react when games run significant discounts on competing stores, but do not make those discounts available on Steam. This is essentially [REDACTED] pricing question.”)

⁴⁹² Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–390, at VALVE_ANT_0053489), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45. (“[REDACTED] retail stores are no longer much of a problem, but [REDACTED] and other sites often eat into their own margin to present Steam titles at a discount.”)

⁴⁹³ Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–390, at VALVE_ANT_0053489), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45. (“[REDACTED] retail stores are no longer much of a problem, but [REDACTED] and other sites often eat into their own margin to present Steam titles at a discount. . . . In this situation, we usually reach out to the developer and explain that the price on [REDACTED] makes the price on Steam look high. We believe this will result in regret purchases by Steam customers when that customer realizes they could have bought the same product elsewhere for less money. The ask from us to the partner is to match the lower price running on [REDACTED].”)

⁴⁹⁴ Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–390, at VALVE_ANT_0053489), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45.

Figure 3: Screenshot of Email from DJ Powers⁴⁹⁵

The development partner would usually come back with “█████’s eating their margin to run that sale, you are welcome to do the same on Steam”. We say “that’s not the way we run our business, we work on rev share not wholesale price”.

- Sometimes, the partner will go ahead and run the same discount on Steam.
- Sometimes, the partner will talk with █████ and have the discount removed or adjusted.
- Sometimes, we end up in a standoff.
 - In this situation, we will often limit marketing of the title on Steam until the pricing is competitive among platforms.

(184) Valve’s PMFN Policy and enforcement is worldwide.⁴⁹⁶ For example, in July 2012, a Valve employee reached out to ██████ regarding a difference in discounts between Steam and the developer’s website and threatened to remove discounts from all of the developer’s games, including a daily deal opportunity.⁴⁹⁷ Later in the chain, in emails between Valve employees, one employee discusses Valve’s approach to price parity enforcement: “If we allow this type of behavior: where we give steam keys away and then you sell the ones we gave you for less than you allow us to sell ours . . . it sets a bad precedent. It encourages our customers to shop elsewhere. . . . I think we should try to set in the minds of our customers

⁴⁹⁵ Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0898986–88, at VALVE_ANT_0898987). See also: Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–390, at VALVE_ANT_0053489), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45.

⁴⁹⁶ For additional examples, see:

Valve, Emails Regarding Price Parity Enforcement, 1/12/2016–1/14/2016 (VALVE_ANT_2804689–693). (Contains emails between Valve employees discussing Valve’s policy on price parity enforcement in response to ██████ discounts.)

Valve, Emails Regarding Price Parity Enforcement, 2/13/2015 (VALVE_ANT_1170665–66). (Contains emails between Valve employees discussing Valve’s policy on price parity enforcement in response to price discrepancies between ██████ and Steam.)

⁴⁹⁷ Valve, Emails with ██████ Regarding Price Parity, 7/12/2012–7/14/2012 (VALVE ANT 0372900–08, at VALVE_ANT_0372907–08). (“You currently have a sale on your site running at 25% ██████ and you have only authorized a 20% discount on our site. Please allow us to offer your games at 25% off so we match. If not, we should end our sale on your products so we do not upset our users.”; “It does not matter that you think Steam sells more, you’re still creating a situation where users on your site get a better deal than users that want to purchase from Steam. You are still competition making us look bad to our users. What does it hurt to have the same discount price unless you [are] truly just thinking about how your site looks compared to Steam. Please understand that I am happy to completely remove ██████ from the sale include [sic] the daily deal for ██████ tomorrow if you feel your products do not benefit from the sales we run. There are lots of partners that would like to have that slot that work with us on a fair bases making sure we get to match their promotions instead of put us at a disadvantage. This is your decision but I am not going to have our customers treated unfairly.”)

that if a game is on Steam, Steam is the place to get it.”⁴⁹⁸ As another example, in February 2015, Steam Business Team member Tom Giardino went to Japan and noticed certain PC games were available at retail outlets at lower prices than Steam.⁴⁹⁹ Mr. Giardino circulated a chart of approximately thirty games, designating which games could be found at a lower price elsewhere relative to the Steam price, and stated that this chart would create “good ammunition for partner conversations.”⁵⁰⁰ See Section 5.2.2 for more examples.

5.2.2. Valve’s continued enforcement of the PMFN Policy

- (185) Valve has enforced its PMFN Policy throughout the class period when it has found price or content parity violations. Valve did so even when the perceived parity violations were minor. These PMFN enforcement actions blocked effective platform-to-platform competition and restricted the ability of competing platforms to steer customers to lower-cost alternative distribution options. As a result, Valve avoided having to compete on price or content and insulated itself from competitive pressures that would have caused Valve to reduce its commission structure to competitive levels.

Enforcement of price parity

- (186) There are numerous instances where Valve applied its PMFN Policy to stop game publishers from listing games at lower prices through other websites or rival platforms. Connor Malone, a Valve employee,⁵⁰¹ testified that he was unaware of any instances where Valve knowingly

⁴⁹⁸ Valve, Emails with [REDACTED] Regarding Price Parity, 7/12/2012–7/14/2012 (VALVE_ANT_0372900–08, at VALVE_ANT_0372900).

⁴⁹⁹ Valve, Emails Regarding Price Parity in Japan, 1/5/2015–2/5/2015 (VALVE_ANT_2768191–92, at VALVE_ANT_2768191). (“One of the things I did during the December trip to Japan was record yen prices for games at retail. PC games at retail in Japan are a sad and lonely thing, usually relegated to the far corners of stores. Some of the prices are wildly high because they haven’t been updated in months or years, but there’s some useful data in the prices of newer releases. It’s also good ammunition for partner conversations. In most cases, Steam pricing is better than the Japanese retail pricing I found, but this was only across 3 to 4 different stores. Games that are listed multiple times were found at different stores with different prices. When the retail price was dramatically better than ours, I highlighted in red.”)

⁵⁰⁰ Valve, Emails Regarding Price Parity in Japan, 1/5/2015–2/5/2015 (VALVE_ANT_2768191–92, at VALVE_ANT_2768191). (“Some of the prices are wildly high because they haven’t been updated in months or years, but there’s some useful data in the prices of newer releases. It’s also good ammunition for partner conversations. In most cases, Steam pricing is better than the Japanese retail pricing I found, but this was only across 3 to 4 different stores. Games that are listed multiple times were found at different stores with different prices. When the retail price was dramatically better than ours, I highlighted in red.”)

⁵⁰¹ Connor Malone, Dep. Tr., 11/8/2023, at 11:9–12. (“Q. And could you state your current job title and employer? A. I work at Valve. We don’t have job titles, but I work on the Steam business team primarily.”)

allowed these types of price discrepancies to occur.⁵⁰² Valve employees even developed a “quick text” template email to expedite writing emails to publishers to communicate why a Steam Key request was denied. The emails states that “it’s important to us that Steam customers get treated fairly relative to how you’re selling the game on other stores” and “we’d be concerned if the game is going to be offered at a much better price somewhere else and want the opportunity to match the offer or provide a similar/equivalent discount.”⁵⁰³

- (187) In internal conversations, members of Valve’s Steam Business Team confirmed price parity was regular policy. For example, Tom Giardino, a Steam Business Team member,⁵⁰⁴ described Valve’s pricing parity requirement as “a platform goal that goes beyond Steam keys[.]”⁵⁰⁵ He stated: “[I]f a game is being sold through some other PC platform, or sold DRM free or whatever the case may be, we want the chance to compete fairly and get that lower price for our customers. Steam keys are sort of a distraction here-- if a store stopped selling keys tomorrow but kept offering better prices than we were able to get for our own customers, that would still be a fundamental problem for us.”⁵⁰⁶ In a different internal conversation, Mr. Giardino reiterated “we have a philosophy which is; don’t make Steam a disadvantaged place to buy your game[.]”⁵⁰⁷
- (188) For example, in discussions with developer [REDACTED] about its game [REDACTED], Mr. Giardino gave a warning on pricing parity: “The big thing we push back on is pricing parity – if you sell for \$5 on your own website but \$15 on Steam, we want to match that lower price so that any

⁵⁰² Connor Malone, Dep. Tr., 11/8/2023, at 49:20–50:25. (“Q. Do you recall any examples where Valve detected a price discrepancy and allowed the price discrepancy to continue? A. I recall having conversations with partners about prices in the past. Q. Yeah, I’m asking -- so has there been any times when you had those conversations and then it just wasn’t resolved and Valve was happy to allow the discrepancy to continue? A. Yeah. Again, it’s -- I -- I recall having those conversations. I can’t remember all of the specific outcomes. So I -- I don’t want to say definitively one way or another because we -- we treat all of these situations kind of individually, and, so, yeah. My memory is just a little bit hazy as to -- if you’re asking me about a specific outcome. Q. Okay. Yeah, so you’re under oath and, you know, this testimony could be played before a jury. So I just want -- and the answer could be you don’t know any examples and that’s fine. But so sitting here today, you cannot identify an examples where Valve identified a price discrepancy and allows that price to continue; is that right? A. Right. I -- I can’t remember the specific -- any specific example, but I -- Q. Okay. A. -- right now.”)

⁵⁰³ Valve, Emails Regarding Quick Text Emails, 5/3/2019–7/22/2019 (VALVE_ANT_0525339–344, at VALVE_ANT_0525343), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 190.

⁵⁰⁴ Tom Giardino, Dep. Tr., 11/2/2023, at 11:23–12:3. (Q. Okay. What are your job duties at Valve? A. I work on the Steam business team, Steam being our platform. Q. Okay. And what is the Steam business team? A. The group of people at Valve who help run the store, services and features of our platform.”)

⁵⁰⁵ Valve, Emails Regarding Game Pricing, 7/23/2018–7/25/2018 (VALVE_ANT_0605887–89, at VALVE_ANT_0605887).

⁵⁰⁶ Valve, Emails Regarding Game Pricing, 7/23/2018–7/25/2018 (VALVE_ANT_0605887–89, at VALVE_ANT_0605887).

⁵⁰⁷ Valve, Emails Regarding [REDACTED], 8/13/2015 (VALVE-ANT_0761512–13, at VALVE-ANT_0761513).

Steam customer gets the best possible deal.”⁵⁰⁸ In response, [REDACTED] employee [REDACTED] [REDACTED] reassured Giardino: “[F]or sure we would not try to undercut steam for sales. *I am not even sure we would be selling on our site after we go to steam* [sic].”⁵⁰⁹

- (189) In 2016, DJ Powers discussed Valve’s price parity policy after developer [REDACTED] sold its game on another platform for a better price:⁵¹⁰

I told [REDACTED] it was bullshit to offer a higher discount on another platform, one week after our summer sale. We gave them a ton of exposure, sold [REDACTED] units and [REDACTED] worth of their game, only to have them beat the discount one week later. I said that in future sales we would like to know if they intend to beat Steam discount elsewhere shortly after or during our sale, because it will likely change how we choose to expose that title on Steam.

- (190) Valve actively enforced its price parity policy with publishers. For example, Valve pulled a publisher’s takeover marketing if the publisher did not lower its price on Steam to match the price offered elsewhere: “We’ve come across a number of sites selling the game for significantly lower than the Steam price and we’re concerned about promoting a launch while the game is easily available at better prices elsewhere. Our concern is about offering our customers a competitive market price, and unfortunately it looks like the price on Steam is out of line with the rest of the market. We will be unable to run a takeover for the game on launch given these circumstances.”⁵¹¹ As discussed in Section 3.3.3, takeovers are the highest level of marketing featuring on Steam, and the marketing benefits from takeovers are very important to those publishers who are chosen. Valve punished the publisher for not following the price parity component of the PMFN Policy by revoking a key marketing opportunity on Steam.

- (191) Other examples of Valve discussing the price parity policy with publishers and enforcing that policy include:

- a. In an email to a publisher (2018), Valve stated that “we really need to discuss your game’s relationship with Steam and other platforms[;]” Valve is troubled by “[your] offer on Discord being different from the offer on Steam.”⁵¹² Valve went on to warn the publisher that “[i]f

⁵⁰⁸ Valve, Emails Regarding Game Pricing, 3/5/2014–3/8/2014 (VALVE_ANT_0240238–240, at VALVE_ANT_0240239).

⁵⁰⁹ Valve, Emails Regarding Game Pricing, 3/5/2014–3/8/2014 (VALVE_ANT_0240238–240, at VALVE_ANT_0240239). (Emphasis added.)

⁵¹⁰ Valve, Emails Regarding Game Sales on [REDACTED], 7/12/2016 (VALVE_ANT_0758390–92, at VALVE_ANT_0758390), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 43.

⁵¹¹ Valve, Emails Regarding Game Marketing, 11/7/2017–11/8/2017 (VALVE_ANT_0062227).

⁵¹² Valve, Emails Regarding Offer Differences, 9/28/2018–10/19/2018 (VALVE_ANT_2970482–493, at VALVE_ANT_2970488).

you can't offer Steam customers the same deal as customers on other platforms, then we're not going to be able to continue selling and promoting the game.”⁵¹³

- b. In an email correspondence with a publisher (2018), Valve told the publisher that “[w]e basically see any selling of the game on PC, Steam key or not, as a part of the same share PC market- so even if you weren’t using Steam keys, we’d just choose to stop selling a game if it was always running discounts of 75% off on one store but 50% off on ours. ([Steam] Keys happen to be tied up in a lot of conversations, but they’re pretty irrelevant to the root concern: treat Steam customers fairly).”⁵¹⁴
- c. In an email exchange (2021), Valve told a publisher that “[w]hat’s important to us is how customers get treated- as the [Steam] documentation indicates, we want to make sure people buying on Steam get treated fairly compared to people buying the PC version anywhere else (whether or not that’s via steam key)!.”⁵¹⁵
- d. In an email chain (2022), a publisher asked Valve to run a promotion for their game at the same time as the game would also be part of a key bundle to benefit charity, in order for the discounts to line up.⁵¹⁶ Valve remarked that for bundling games, “the big thing to think about is price—using Steam keys to sell on other stores is fair play, but it’s under the precondition that Steam customers aren’t getting screwed over on price[.]”⁵¹⁷ Valve reminded the publisher about the price parity policy, stating that “if you want to offer a super low discount elsewhere,” Valve wants “Steam players to get that super low discount too[.]”⁵¹⁸

(192) While Valve vouches its concerns about price parity in terms of “fairness”, the effect of the PMFN is to limit the ability of a developer to attempt to move users to a different platform, prevent a (potential) competitor from offering price inducements/support to developers to encourage lower pricing as a means of inducing developers and users to the new platform, and place the cost of price parity compliance on the developer. Whether Valve’s “concern” for fairness is real or pretextual, the impact is to deny both developers and gamers the benefits of cross-platform competition.

⁵¹³ Valve, Emails Regarding Offer Differences, 9/28/2018–10/19/2018 (VALVE_ANT_2970482–493, at VALVE_ANT_2970488).

⁵¹⁴ Valve, Emails Regarding Steam Keys and Discount, 10/16/2018–10/30/2018 (VALVE_ANT_0265027–030, at VALVE_ANT_0265027).

⁵¹⁵ Valve, Emails Regarding Steam Pricing, 7/28/2021–7/30/2021 (VALVE_ANT_0854420–422, at VALVE_ANT_0854420).

⁵¹⁶ Valve, Emails Regarding Game Bundling and Pricing, 8/30/2022–9/13/2022 (VALVE_ANT_0561240–43, at VALVE_ANT_0561241–42).

⁵¹⁷ Valve, Emails Regarding Game Bundling and Pricing, 8/30/2022–9/13/2022 (VALVE_ANT_0561240–43, at VALVE_ANT_0561241–42).

⁵¹⁸ Valve, Emails Regarding Game Bundling and Pricing, 8/30/2022–9/13/2022 (VALVE_ANT_0561240–43, at VALVE_ANT_0561241–42).

Enforcement of content parity

- (193) Valve’s SDA imposes a contractual requirement of content parity for all games sold on Steam. This prevents developers from adding any features to their games elsewhere that they do not offer on Steam.⁵¹⁹ Valve claims that that the content parity creates cohesion and “for [Valve’s] customers to be contained within the Steam ecosystem.”⁵²⁰ In sum, Steam would rather not

⁵¹⁹ Jason Ruymen, Dep. Tr., 9/19/2023, at 33:11–14. (“Q. Does the term parity mean anything to you in terms of your work at Valve? A. We do have -- we do ask for parity for content on games that are sold on Steam.”)

Kassidy Gerber, Dep. Tr., 10/5/2023, at 45:14–46:12. (“Q. Ms. Gerber, during the time you’ve worked at Valve, did Valve have a policy to require material parity for things sold on the Steam store? A. I would not describe what we do as a policy, but in practice, we ask that partners have material parity for their games on Steam between other PC versions. Q. What does “material parity” mean in this context? A. It means the game you offer on Steam has to be comparable, as good as any other version -- any other PC versions. Q. And when you say “as good as,” does that mean it has to have the same DLC? A. Yes. Q. And the same content for the -- in other words, you can’t have some additional play time on the version that’s sold outside of Steam? A. The -- having additional play time that’s not available on Steam, but is available on another PC store, would be a -- would be a, I think, in my opinion, violation of material parity, yeah.”)

A series of emails discussing SDA negotiations with developer ██████ demonstrate Valve’s commitment to uphold content parity. In response to ██████ attempting to negotiate the material parity stipulations, Valve states: “Unfortunately, we don’t think we can agree to what you’re proposing. If a game on Steam is going to be materially different from the game on other PC platforms, we’d rather just not have the game on Steam in the first place[.]” After receiving this email, ██████ agrees to “revert to [Valve’s] original [material parity] language[.]” In the same email thread, ██████ also attempts to push back against Valve’s standard policies relating to material parity ██████. Valve responds similarly, and NCSOFT agrees to move forward with the agreement without its proposed revisions relating to ██████. See:

Valve, Emails Regarding ██████-Valve SDA, 7/23/2019–4/27/2020 (VALVE_ANT_2814301–311, at VALVE_ANT_2814304, VALVE_ANT_2814306, VALVE_ANT_2814308–309, VALVE_ANT_2814311), available at Kassidy Gerber, Dep. Tr., 10/5/2023, Exhibit 102. (“Our team is comfortable with ‘material parity’ as it relates to PC distribution channels, and I have reverted to your original language in that respect.”; ██████ agree[s] that the Steam version in a particular country should be kept at material parity with the game on other PC platforms in that country. Our intent with the added clause is to ensure that the country is also taken into account in our parity obligation.”; “For #2, we have some similar concerns to the ones we raised before—we don’t want to set up a situation where your customers on Steam are getting an inferior product for any reason, which includes ██████. Conceivably, with the language the way you’ve drafted it, you could set up ██████

██████████ In that situation, the only Steam version would be materially worse than the non-Steam version. We’re not really comfortable with that scenario.”; “We have discussed internally and, based on the conversation between the parties earlier today, we can accept moving forward without our added language regarding territory restrictions in Section 2.4.”)

See also: Kassidy Gerber, Dep. Tr., 10/5/2023, at 111:11–21, 118:18–119:11. (“Q. In the middle of Mr. Schenck’s email, he writes, ‘Unfortunately, we don’t think we can agree to what you’re proposing. If a game on Steam is going to be materially different from the game on other PC platforms, we’d rather just not have the game on Steam in the first place.’ Do you see that? A. I see that. Q. Is Mr. Schenck’s statement there consistent with your understanding of Valve’s policy at the time? A. Yes.”; “Q. And then he writes, ‘In that situation, the only Steam version would be materially worse than the non-Steam version. We’re not really comfortable with that scenario.’ Did I read that correctly? A. Yes. Q. And so what did you understand Mr. Schenck was communicating to ██████ with these words. A. That he didn’t like the edits that they made to the SDA. Q. Because they could sell a version of the game on a non- -- they could sell a non-Steam version of the game that would be materially different than the Steam version? A. His concerns are around what we’re offering on Steam. So that’s the -- he’s saying he doesn’t want anything that we put on Steam not to be as good as another version elsewhere.”)

⁵²⁰ Connor Malone, Dep. Tr., 11/8/2023, at 166:14–24. (“Q. Is there a business reason that Valve includes that provision in the SDA today? A. I think so. Q. Okay. And what is the business reason? A. I think it’s good for our customers to be contained within the Steam ecosystem. It provides security for their payment processing, convenience by already having their funds in Steam. I think it just improves the customer experience.”)

sell a game at all than only be able to sell *certain* versions of a game.⁵²¹ In one example, Steam sold all but one edition of [REDACTED], yet it threatened to drop all other editions of the game from the platform unless it received access to the remaining edition.⁵²² Thus, Valve's content parity policy removes another competitive tool that a competing platform with lower commissions might use to try to make inroads against Valve's dominance.⁵²³ As an economic matter, the competitive impact of this policy is to limit the opportunity for a rival platform to differentiate itself from Steam by containing special or unique versions of games as a means of attracting users.

(194) Valve contacts game publishers to correct violations and to threaten punishment when they identify a content parity issue.⁵²⁴ In response, Valve might delist—or threaten to delist—games

⁵²¹ Kassidy Gerber, Dep. Tr., 10/5/2023, at 96:19–97:6. (“Q. And how does that harm your customers, if it does, that they can buy all the versions of [REDACTED] on Steam except for the starter version, which is available on a different store, [REDACTED]? A. For a customer that would prefer to purchase the starter edition over the, say, standard edition, if they come to Steam and see it's not available, we think it damages the trust that they have that Steam is a good place to buy games because we don't have a full offering. So we just would rather wait to offer the game to customers until [REDACTED] is ready to offer all versions to Steam customers.”)

⁵²² Kassidy Gerber, Dep. Tr., 10/5/2023, at 96:1–11. (“Q. So you write to [REDACTED] and you say, we're going to take down all of your versions of the [REDACTED] game on Steam if you don't offer us the starter's version that you're going to sell on [REDACTED], your own store? A. Correction. They weren't going to sell it in the future, they were already selling it on [REDACTED], and they weren't selling it on Steam. And so, yes, we wanted to stop selling the game because we didn't have a complete version on Steam, complete version of all the offerings.”)

⁵²³ Augusta Butlin, Dep. Tr., 10/11/2023, at 136:22–137:7. (“Q. So why is it important to have parity if you're not sure if consumers are even connecting parity of content and pricing? A. Making sure that Steam users have access gives them the opportunity to make a choice for themselves. How they make that choice is up -- is up to them and their personal priorities. Q. And they could make the choice to buy on another storefront, another PC gaming store? A. Sure.”)

⁵²⁴ See, for example:

Valve, Emails Regarding Content Parity, 10/2/2015–10/7/2015 (VALVE_ANT_0215669–670, at VALVE_ANT_0215669). (In an email from Tom Giardino to [REDACTED], Mr. Giardino said that “[i]n our business agreement, we specify that Company [REDACTED] will deliver to Valve any application updates when available, and no later than they are provided to any other distribution service. And we include DLC in that description. (that's section 2, specifically 2.1 and 2.4, if you need the reference). In short, what we're asking for is to get DLC on our store at the same time you launch it elsewhere. It's not OK to launch a DLC on your own or other stores, and then bring it to Steam some weeks or months later.” “As long as there's parity between what customers can buy and what they're being charged, we're OK – we just don't want the situation where a user on Steam has worse options than other users [elsewhere.]”)

Adam Klaff, Dep. Tr., 11/14/2023, at 109:18–110:15. (“Q. Okay. And what would happen if you determined that there wasn't similar content being offered on Steam versus another store? . . . A. That would be something that we'd -- we'd have a conversation with the developer about. . . . [W]e'd basically, you know, talk to the developer and say, hey, we noticed that . . . there's DLC offered elsewhere that . . . Steam customers aren't able to get this content. So, . . . we'd like to have the chance to get something, you know, that's -- that's comparable for Steam customers. So, . . . we'd like to have the chance to get something, you know, that's -- that's comparable for Steam customers.”)

Valve, Emails Regarding [REDACTED], 2/10/2017–2/15/2017 (VALVE_ANT_1221288–291, at VALVE_ANT_1221289–290), available at Kassidy Gerber, Dep. Tr., 10/5/2023, Exhibit 101. (“Currently we are offering the starter pack exclusively through [REDACTED] since we are experimenting with sales and analyzing if this is causing cannibalization from the other skus.”; “If you aren't able to bring the starter sku back to steam by EOD tomorrow, Wednesday, February 15th, we plan to remove all SKUs of [REDACTED] from the store.”)

or might withhold marketing support until content parity is restored.⁵²⁵ In one example, Valve told its partner that it would no longer provide curated marketing if the partner didn’t update Steam with three game costumes that were available on another distribution platform.⁵²⁶

- (195) Such warnings are routine. For example, when ██████████ was opening its own cash shop to sell in-game items for games published outside of Steam, it asked Valve to clarify the content parity rules as applied to ██████████ situation.⁵²⁷ Valve responded that “if

⁵²⁵ Connor Malone, Dep. Tr., 11/8/2023, at 47:17–20 (“We do ask partners for content parity. And there have -- I believe there have been times in which additional extra curated marketing was not given to a partner if -- if there was a discrepancy there.”).

Valve, Emails Regarding ██████████, 2/10/2017–2/15/2017 (VALVE_ANT_1221288–291, at VALVE_ANT_1221289–290), available at Cassidy Gerber, Dep. Tr., 10/5/2023, Exhibit 101. (“Currently we are offering the starter pack exclusively through ██████████ since we are experimenting with sales and analyzing if this is causing cannibalization from the other skus.”; “If you aren’t able to bring the starter sku back to steam by EOD tomorrow, Wednesday, February 15th, we plan to remove all SKUs of ██████████ from the store.”)

Kassidy Gerber, Dep. Tr., 10/5/2023, at 71:19–72:17. (“Q. Different question. Is it fair to say that you ask of developers that anything they’re promoting is something that you’re able to offer on Steam? A. We -- are you talking about content? Q. Things that are being promoted. A. Like what? Q. Oh, anything being promoted. A. If a developer is promoting content, and we are aware of it, and we don’t have it on Steam, then I will ask that we can make it available on Steam. Q. And if they won’t give it to you on Steam? A. It depends. Q. You might take down their game? A. We might delay some curated promotion. There’s a bunch of different things we might do if we realize that we’re missing content that they have on other channels. Q. And one of the things you might do is take down their game? A. I don’t think I’ve ever done that, but I don’t know. I guess, technically, it’s an option, yes.”)

⁵²⁶ Jason Ruymen, Dep. Tr., 9/19/2023, at 42:25–43:14 (“Q. Valve considered the content not to be in material parity because these three costumes that don’t affect gameplay mechanics were not available on Steam but were available on ██████████; is that right? . . . A. We certainly wanted a similar kind of offering, if not the same offering that other retail stores or other digital stores even were going to sell the game for. Q. So either those -- those three skins or three other unique skins to Steam or something like that? A. Right.”)

See also: Valve, Emails Regarding Game Content, 2/20/2014–3/3/2014 (VALVE_ANT_2714225–29, at VALVE_ANT_2714226–27). (Valve told ██████████ that it “noticed that the pre-order offer on ██████████ is sweeter than on Steam, e.g. we are not able to offer the ██████████. . . . Particularly since we are putting up ██████████ in a takeover spot, would be nice to be able to offer Steam customers the same level of service as ██████████ customers.” ██████████ replied: “Regarding ██████████ and ██████████, we do expect to make this content available for purchase to the full channel once retail exclusivity commitments have expired.” But Valve was not happy and told ██████████ that “going forward the offer on Steam needs to be in material parity with offers through other outlets in order for us to promote the title at release.”)

Jason Ruymen, Dep. Tr., 9/19/2023, at 46:8–20, 84:18–85:8. (“Q. In the email at the -- the email at the top of the page is a response from you to your colleagues at Valve, right? A. Correct. Q. And your proposal here was ██████████ needs to provide parity for you to market their games at all or to be willing to do a preorder; is that right? A. For us to do any curated marketing for their game or even offer a preorder, yes.”; “Q. Valve is saying because there isn’t pricing parity on this game, we’re not going to do a takeover, we’re going to reduce our marketing of the game; is that fair? A. We were telling them we would not do a curated takeover for the game. Q. When you say ‘a curated takeover,’ can you tell me what you mean by that? A. Yeah, like we defined a takeover as something where we have highlighted a game on the front page on Steam. Those are typically always curated for us. We’re deciding what is going to be given a takeover or not.”)

⁵²⁷ Valve, Emails Regarding ██████████ Content Parity, 6/20/2022–6/28/2022 (VALVE_ANT_1210287–290, at VALVE_ANT_1210290).

you’re going to offer content on the [REDACTED] cash shop, you’ll need to offer that to Steam users via Steam as well.”⁵²⁸ In other words, no differentiation across platforms was permitted.

(196) Other examples of discussion and enforcement of Valve’s content parity with publishers include:

- a. In an email regarding setting up the a storefront (2021), developer [REDACTED] asked Valve about offering different content on [REDACTED].⁵²⁹ Steam’s Business Team declined this request, and told [REDACTED] that “it wouldn’t be OK to sell the game on Steam, but make a DLC available exclusively on other PC stores, whether or not you delivered the DLC via Steam Key[.]”⁵³⁰ The email also stated: “If we can’t offer the product fairly to our own customers, we’d just choose not to sell it. We aren’t interested in doing business with somebody if they give Steam customers bad treatment on price or content, regardless of what’s in the [SDA].”⁵³¹
- b. In a response to a publisher inquiry about selling a game on Steam (2022), Valve remarked that “[t]he main goal for us is just making sure that once we’re *selling* on Steam, we’re able to put the same offers in front of Steam users as you’re making elsewhere on PC.”⁵³²
- c. Kassidy Gerber, Valve employee, testified (2023) that when Steam publishers promote content (games, DLC, etc.) on competing platforms but not on Steam, Valve has several punitive options, including delaying their curated promotion on Steam and removing their games from Steam, demonstrating that Valve exercises and maintains its monopoly power as well as protect its competitive position in the PC games market.⁵³³ Later in her deposition, Ms. Gerber discusses an example where Valve threatened to remove a [REDACTED] game because [REDACTED] didn’t offer the game’s starter pack on Steam even though it was

⁵²⁸ Valve, Emails Regarding [REDACTED] Content Parity, 6/20/2022–6/28/2022 (VALVE_ANT_1210287–290, at VALVE_ANT_1210288).

⁵²⁹ Valve, Emails Regarding [REDACTED] Content, 10/25/2021–10/27/2021 (VALVE_ANT_1200520–22, at VALVE_ANT_1200522).

⁵³⁰ Valve, Emails Regarding [REDACTED] Content, 10/25/2021–10/27/2021 (VALVE_ANT_1200520–22, at VALVE_ANT_1200521).

⁵³¹ Valve, Emails Regarding [REDACTED] Content, 10/25/2021–10/27/2021 (VALVE_ANT_1200520–22, at VALVE_ANT_1200521).

⁵³² Valve, Emails Regarding Selling Game on Steam, 2/15/2022–4/8/2022 (VALVE_ANT_0967621–644, at VALVE_ANT_0967634–35).

⁵³³ Kassidy Gerber, Dep. Tr., 10/5/2023, at 16:12–15, 71:19–72:17. (“Q. Different question. Is it fair to say that you ask of developers that anything they’re promoting is something that you’re able to offer on Steam? A. We -- are you talking about content? Q. Things that are being promoted. A. Like what? Q. Oh, anything being promoted. A. If a developer is promoting content, and we are aware of it, and we don’t have it on Steam, then I will ask that we can make it available on Steam. Q. And if they won’t give it to you on Steam? A. It depends. Q. You might take down their game? A. We might delay some curated promotion. There’s a bunch of different things we might do if we realize that we’re missing content that they have on other channels. Q. And one of the things you might do is take down their game? A. I don’t think I’ve ever done that, but I don’t know. I guess, technically, it’s an option, yes.”)

offered on [REDACTED].⁵³⁴ [REDACTED] later conceded to Valve's demands by removing the starter pack from [REDACTED] until [REDACTED] was prepared to list the product on both Steam and [REDACTED].⁵³⁵

⁵³⁴ Cassidy Gerber, Dep. Tr., 10/5/2023, at 95:8–96:18. (“Q. And then you write, ‘If you aren’t able to bring the starter SKU back to Steam by EOD’ -- that means ‘end of day’? A. Yes. Q. -- ‘by end of day tomorrow, Wednesday, February 15th, we plan to remove all SKUs of [REDACTED] from the store.’ A. Yes. Q. You wrote that? You wrote that? A. Yes. Q. And why? A. We felt that it wasn’t a fair offer on Steam to only have them -- like, more premium editions of this game available when we knew that there was a compelling starter edition that we didn’t have. We thought it was bad to continue promoting this game like we had a complete offering when we didn’t. . . . Q. On what basis were you going to take down all their games for them having this starter version on [REDACTED]? A. We were effectively missing a DLC offering. So if they weren’t going to give us all the versions of the game, then we wanted to stop offering it to our customers.”)

Valve, Emails Regarding [REDACTED], 2/10/2017–2/15/2017 (VALVE_ANT_1221288–291, at VALVE_ANT_1221289–290), available at Cassidy Gerber, Dep. Tr., 10/5/2023, Exhibit 101.

⁵³⁵ Cassidy Gerber, Dep. Tr., 10/5/2023, at 101:4–102:1. (“Q. I’ll ask a different question. You did take down -- strike that. [REDACTED] did what you wanted, they removed the starter game from their store; correct? A. That is incorrect. What we wanted was to sell all versions they were selling on [REDACTED]. And, instead, it says they expect to have it delisted from [REDACTED] by 5:00 p.m. Q. Right. So they’re no longer going to sell it as of 5:00 p.m.? A. Right, but that’s not what we asked them for. Q. Okay. But was it an acceptable solution? A. Yes, it was an acceptable solution to not -- Steam not having all versions of the game. Q. Because now there’s no reason for somebody to go to [REDACTED] to buy games because the versions being offered on [REDACTED] are exactly the same as what’s being offered on Steam? A. Yeah. I never -- this was never about having a problem with customers going to [REDACTED]. This was always about promoting full versions of a game offering -- a game’s offerings on Steam, so . . .”)

Valve, Emails Regarding [REDACTED], 2/10/2017–2/15/2017 (VALVE_ANT_1221288–291, at VALVE_ANT_1221288), available at Cassidy Gerber, Dep. Tr., 10/5/2023, Exhibit 101.

6. Anticompetitive Effects of Valve’s Monopoly Power

6.1. Valve’s supracompetitive commission rate to publishers

- (197) As discussed in Section 4.2.2, Valve’s monopoly power allows it to set and sustain a supracompetitive commission rate that publishers must pay to secure distribution of their games on Steam. Steam’s more direct competitors—EGS and the Microsoft Store—charge publishers commissions of 12% in comparison to Steam’s 30%. While benefiting Valve, the supracompetitive commission rate harms competition in the relevant market.
- (198) Valve recognizes that its commission rate and the resulting so-called revenue sharing arrangement is an issue with publishers.⁵³⁶ In a Valve competitor analysis for the 2020 GDC and an accompanying email, Valve acknowledges that EGS is “[d]oing [w]ell” from the developers’ perspectives on revenue sharing.⁵³⁷ Given the survey and other evidence, it appears that publishers agree.⁵³⁸ At least as early as 2018, Valve employees noted that “[p]retty much everyone agreed that Steam wasn’t worth 30%” of revenue and that “Steam hasn’t had to compete, and thus has gotten lazy and hasn’t had to change revenue share[.]”⁵³⁹ Developers stated that they would leave Steam if a competitor platform “comes along and offers a better deal” and that, for example, they “would be less likely to take a deal from another platform for exclusive distribution” if Valve “took a smaller share” of revenue.⁵⁴⁰
- (199) Additional documents support the same conclusion.⁵⁴¹ For example, in an email chain between Valve and ██████ regarding ██████ launch on Steam, Valve alerted ██████ about

⁵³⁶ Valve, Emails Regarding Competitor Analysis, 1/31/2020–2/13/2020 (VALVE_ANT_0167817–20, at VALVE_ANT_0167817, VALVE_ANT_0167819).

⁵³⁷ Valve, Emails Regarding Competitor Analysis, 1/31/2020–2/13/2020 (VALVE_ANT_0167817–20, at VALVE_ANT_0167817, VALVE_ANT_0167819).

⁵³⁸ When publishers were asked about the “justifiable amount of your game’s revenue for digital storefronts” in a GDC 2021 survey, “[o]nly 3% said a 30% cut is justifiable and the most popular answer was 10%, which garnered 23% of responses, followed by 15% with 20% of responses. Viewed another way, 4[3]% of respondents find a 10–15% cut justifiable.” See: GDC, “State of the Game Industry 2021,” 2021, at 26–27.

⁵³⁹ Valve, Emails Regarding Boston Developer Meeting, 10/5/2018 (VALVE_ANT_0054709–14, at VALVE_ANT_0054712), available at Alden Kroll, Dep. Tr., 11/16/2023, Exhibit 242.

⁵⁴⁰ Valve, Emails Regarding Boston Developer Meeting, 10/5/2018 (VALVE_ANT_0054709–14, at VALVE_ANT_0054712–13), available at Alden Kroll, Dep. Tr., 11/16/2023, Exhibit 242.

⁵⁴¹ For additional examples, see:

Valve, Email Regarding Microsoft Store, 12/7/2011 (VALVE_ANT_2533446). (In an email regarding Microsoft Store’s launch, a Valve employee stated that “[Microsoft] Store’s revenue model is more generous than Apple’s, which takes a 30 percent cut. Microsoft will collect the same amount through an app’s first \$25,000 sales[,] then only 20 percent thereafter[.]” the employee goes on to question if this is the “[b]eginning of the margin wars[.]”)

Valve, Emails Regarding Triple-A Exodus, 8/7/2018–8/8/2018 (VALVE_ANT_1444184–86, at VALVE_ANT_1444184). (A Valve email chain states that “[i]t feels like a bunch of threats and risks have been swirling around us recently and some feel more real than they have in a long time.” In particular, discussion relating to triple-A publishers stated that these publishers were “think[ing] harder about testing out their own platforms.” Additionally, the email chain discussed “growing pressure from [Epic’s] Tim Sweeney and a drumbeat from developers that 30% is too big of a cut for what we provide.”)

Valve, Emails Regarding Epic’s Commission, 12/4/2018 (VALVE_ANT_1404093–94, at VALVE_ANT_1404093–94). (A Valve employee internally emailed a quote that read “Epic undercuts Steam with new store that gives dev[eloper]s more money[,]” to which another employee replied that “88/12 [revenue sharing] is a super powerful message[,]” and Epic is “going to make a bunch of headway with that. Steam needs to outperform then [sic] with actual sales (and maybe rethink our own revenue share approach across the board?).” Further, another employee remarked that

[REDACTED]

Valve, Email Regarding Developer Meeting Notes, 1/25/2019 (VALVE_ANT_2417190–93, at VALVE_ANT_2417191–93). (An email regarding notes for developer meetings remarks that Epic’s 88% revenue share will excite developers and that “Epic is going to have success convincing dev[eloper]s to ship content on their store under these terms[.]” the actions “Steam/Valve [is] taking in reaction to all of this” is “[t]aking a fresh look at our revenue share and re-shaping it to reward the biggest games on Steam that provide incredible network effects to the platform[,]” “[a]ggressively continuing to grow the platform into new territories[,]” and making developers’ “decision to leave Steam as difficult as possible.”)

Deep Silver publisher’s game, Metro Exodus, had been available on Steam in 2019 for pre-order at \$59.99 but was removed before its release and offered on Epic for \$50. However, Deep Silver would still fulfill pre-orders that had been made on Steam. Epic’s “competitive revenue split of 88/12 [was] hinted to be the reason behind the leaner price [on Epic,]” as Deep Silver’s CEO, Klemens Kunderatz, remarked that “Epic’s generous revenue terms are a game changer that will allow publishers to invest more into content creation, or pass on savings to the players.” In a series of email exchanges that discuss Deep Silver’s decision, a Valve employee notes that “cutting price from \$59.99 to \$50 seems like it may actually make some customers happy[,]” and questions if it’s worth to Steam customers “paying \$10 more [on Steam.]” They remark that “customers are going to buy the product where it’s on sale[,]” they ask if Valve should match the “lowest price” and “take the loss and retain the player,” because in the future, “the loss is shared by the publisher.” See:

PC Gamer, Metro Exodus Will Only Release on the Epic Store, But Steam Preorders Will Be Honored,” 1/29/2019, <https://www.pcgamer.com/metro-exodus-will-only-release-on-the-epic-store-but-steam-preorders-will-be-honoured/>.

Valve, Emails Regarding Metro Exodus Game, 1/28/2019–2/4/2019 (VALVE_ANT_0052045–75, at VALVE_ANT_0052069, VALVE_ANT_0052071, VALVE_ANT_0052072–73).

In an email regarding talking points for a meeting with developer, Valve recognized that most developers would “come into that meeting thinking, ‘Wow, crazy year with all that Epic stuff. How are things going?’” and instead of highlighting how “we react[ed] internally to Epic[,]” “[we should] look back at some of the work we’ve done in 2019[.]” Valve went on to point out that the question Valve should be ready for is if “Steam [is] going to change [revenue share] terms in a material way because of Epic disruption[,]” the answer to which is Valve already changed its revenue share in 2018. However, Valve’s acknowledgement in its 2020 GDC talking points that Valve was falling short in terms of “[i]ssues with Rev[enue] Share” demonstrates that publishers were not satisfied with Valve’s new revenue share policy. See:

Valve, Emails Regarding GDC Notes, 1/10/2020–1/17/2020 (VALVE_ANT_2417091–93, at VALVE_ANT_2417091–92).

Valve, Email Regarding 2020 GDC, 2/11/2020 (VALVE_ANT_1168963–67, at VALVE_ANT_1168963).

the new, tiered revenue share structure before its official announcement.⁵⁴² [REDACTED]

[REDACTED]⁵⁴³ In his testimony, Scott Lynch confirmed that [REDACTED] in the email,⁵⁴⁴ and that Valve did not agree to the [REDACTED].⁵⁴⁵ Thus, [REDACTED] decided not to launch [REDACTED] game on Steam.⁵⁴⁶ Confronted with the threat of a large publisher with a popular game switching from Steam to another platform, Valve chose to—and was able to—sustain its supracompetitive price. On its face, this is evidence of Valve's monopoly power.

(200) After Valve restructured its commissions to tiers, its commissions remained supracompetitive, and developers, especially the smaller ones, had no viable switching option to even threaten to defeat that structure. Valve acknowledged that the new revenue share benefits only top earners, stating that “[REDACTED]”

⁵⁴² Valve, Emails Regarding [REDACTED], 11/7/2018–11/17/2018 (VALVE_ANT_0295988–990, at VALVE_ANT_0295989), available at Scott Lynch, Dep. Tr., 10/12/2023, Exhibit 143. (“We appreciate your feedback on the rev share program. We understand your ask around moving the upper Qualification Revenue Level & paying out retroactively once a tier is achieved.”)

Steam, “New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement,” 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>. (“Today, we updated the Steam Distribution Agreement with several important changes. . . . With that in mind, we’ve created new revenue share tiers for games that hit certain revenue levels. Starting from October 1, 2018 (i.e. revenues prior to that date are not included), when a game makes over \$10 million on Steam, the revenue share for that application will adjust to 75%/25% on earnings beyond \$10M. At \$50 million, the revenue share will adjust to 80%/20% on earnings beyond \$50M. Revenue includes game packages, DLC, in-game sales, and Community Marketplace game fees.”)

⁵⁴³ Valve, Emails Regarding [REDACTED], 11/7/2018–11/17/2018 (VALVE_ANT_0295988–990, at VALVE_ANT_0295990), available at Scott Lynch, Dep. Tr., 10/12/2023, Exhibit 143. (“Thus a game should receive the enhanced revenue share on all revenues related to the game, including retroactively on revenue received while achieving the Qualification Levels.”)

⁵⁴⁴ Scott Lynch, Dep. Tr., 10/12/2023, at 236:9–14. (“Q. Those reduced revenue shares, more favorable revenue share for the developer, it’s not retroactive on the prior dollars; right? A. That’s correct. Q. That’s what [REDACTED] wants; right? A. That seems to be what he’s referring to.”)

⁵⁴⁵ Scott Lynch, Dep. Tr., 10/12/2023, at 246:17–22. [REDACTED]

Scott Lynch, Dep. Tr., 10/12/2023, at 249:1–13. (“Q. That reflects that you could not come to an agreement with [REDACTED] about revenue sharing with respect to [REDACTED]; right? [REDACTED]”)

[REDACTED] It just went on for a really long time. And I remember kind of being bummed that we could not -- we could not get there. I think a lot of people put a lot of effort into it, including myself.”)

⁵⁴⁶ Scott Lynch, Dep. Tr., 10/12/2023, at 250:12–15. (“Q. They also ultimately didn’t launch on Steam for [REDACTED]; right? A. They did not -- I don’t know if they’ve launched it yet, but at launch they were not there.”)

██████████. Particularly in the wake of *the SDA changes that specifically benefit our top revenue earners*, I don't think it's a great look.”⁵⁴⁷

- (201) Valve understood that publishers felt Steam’s fees, even when adjusted to the tiered revenue structure, were too high. In a series of emails regarding Valve’s new revenue share, a Valve employee shared a quote from an article which states that Valve’s “30-percent revenue cut is steep, especially given how little Valve does to earn it nowadays.”⁵⁴⁸ In an email regarding meeting with ██████████ about the new revenue share, Valve noted that “██████████ folks were pretty ‘stoic’ and so not a lot of reaction on the proposed new rev[enue] share[,]” and that after the meeting, Scott Lynch of Valve said that ██████████ “immediately” went into ██████████ ██████████⁵⁴⁹ An internal email notes that Valve gave ██████████ “a pitch for the interesting things we could do together if ██████████ games came to Steam[,]” and ██████████ ██████████ ██████████ ██████████⁵⁵⁰ Valve had no compulsion to respond to or alter terms since the evidence indicates it knew ██████████ had no realistic alternatives that could threaten Steam’s dominant position.

- (202) Additionally, the commission rates charged by other digital platforms support my conclusion that Steam has monopoly power and that the rates it sets are supracompetitive. Per Epic, “[t]he 70% / 30% [revenue] split was a breakthrough more than a decade ago with the advent of Steam,” but today, “digital software stores have grown into a \$25,000,000,000+ business worldwide across all platforms, yet the economies of scale have not benefited developers.”⁵⁵¹ Epic notes that “[i]n our analysis, stores charging 30% are marking up their costs by 300% to 400%. But with developers receiving 88% of revenue and Epic receiving 12%, this store will

⁵⁴⁷ Valve, Emails Regarding Developer Meeting, 11/15/2018–12/5/2018 (VALVE_ANT_2775558–568, at VALVE_ANT_2775558). (Emphasis added).

⁵⁴⁸ Valve, Emails Regarding Valve’s Commission, 11/30/2018–12/5/2018 (VALVE_ANT_1217134–36, at VALVE_ANT_1217135).

⁵⁴⁹ Valve, Emails Regarding ██████████ Presentation, 10/18/2018–10/19/2019 (VALVE_ANT_1747246–47, at VALVE_ANT_1747247).

⁵⁵⁰ Valve, Emails Regarding ██████████, 10/30/2019 –10/31/2019 (VALVE_ANT_0489566–67, at VALVE_ANT_0489566–67).

⁵⁵¹ Epic, “Diesel Q&As for Tim from Embargoed Media Outlets,” c. 12/4/2018 (EPIC_VALVE_0000058–72, at EPIC_VALVE_0000061).

still be a profitable business for us.”⁵⁵² Following Epic’s announcement of EGS and the associated 12% commission rate, Microsoft followed suit in 2021 by cutting the commission it charged on Microsoft Store from 30% to 12%, stating that it wants developers to “find success” on its platform, so a “clear, no-strings-attached revenue share means developers can bring more games to more players and find greater commercial success from doing so.”⁵⁵³ For further discussion, see Section 7.4.

- (203) Valve maintains this supracompetitive commission rate because of its PMFN Policy. Absent the PMFN Policy, other platforms could charge lower commission rates to publishers to incentivize them to join that competing platform, and the publishers could charge lower prices to entice gamers to the new platform. This could be done using lower prices or different, desirable content not available on Steam. However, due to Valve’s PMFN Policy, publishers that list on Steam cannot offer different prices—despite facing lower platform fees on those platforms—or content on other platforms.

6.2. Harm to ability of entrants to effectively compete

- (204) Entrants into the relevant market have been unable to compete effectively with Steam; no entrant has been able to achieve meaningful success in the marketplace or gain and maintain a meaningful market share. Despite other third-party digital PC game distribution platforms offering developers benefits similar to Steam and charging lower commissions than Steam, Steam maintains its dominant position in the relevant market. According to an article from PC World, “Amazon, GOG, Humble, and Microsoft have tried to take on PC gaming’s 800-pound gorilla and all largely failed to shake up the status quo.”⁵⁵⁴ Further, according to a report emailed to Valve in 2022, “[m]any companies have tried without success to compete against Steam. This includes large publishers like EA. The most notable recent attempt is from Epic Games, the developer behind Fortnite and the Unreal Engine. Epic’s main attraction is a 12% commission for developers.”⁵⁵⁵

⁵⁵² Epic, “Diesel Q&As for Tim from Embargoed Media Outlets,” c. 12/4/2018 (EPIC_VALVE_0000058–72, at EPIC_VALVE_0000066).

⁵⁵³ The Verge, “Microsoft Shakes Up PC Gaming by Reducing Windows Store Cut to Just 12 Percent,” 4/29/2021, <https://www.theverge.com/2021/4/29/22409285/microsoft-store-cut-windows-pc-games-12-percent>.

⁵⁵⁴ PC World, “Watch Out, Steam? Discord Starts Selling PC Games, Unveils a Universal Game Launcher,” 8/9/2018, <https://www.pcworld.com/article/402408/discord-store-selling-pc-games.html>.

⁵⁵⁵ Valve, Email Regarding PC Game Distribution, 10/18/2022 (VALVE_ANT_1225364–78, at VALVE_ANT_1225365).

- (205) The inability of entrants to successfully compete with Steam is a direct result of the monopoly power that Valve has acquired and maintained through the enforcement of its PMFN Policy. As discussed in Section 5.2, Valve’s PMFN enforcement has historically restricted the ability of competing platforms to attract customers to lower-cost alternative distribution options and continues to do so. New platform entrants must convince both publishers and users to join their platforms and “amass a critical mass of users on both sides [of the platform].”⁵⁵⁶ The PMFN Policy establishes an insurmountable barrier.
- (206) The PMFN Policy effectively forecloses the paths that entering platforms could follow to compete effectively and on the merits with Steam. One option for potential entrants would be to offer lower commission cost options for publishers to incentivize them to charge lower prices on the entering platform. This would entice both publishers and users to the platform. The PMFN Policy blocks this path. A second option would be to provide content not available on Steam to differentiate the platform. Without a PMFN, this task is, at best, a challenge. With the PMFN Policy, the pathway is blocked. With the PMFN Policy in place, Steam effectively removes both avenues of competition as options and makes the impediment to effective entry a barrier that cannot realistically be overcome.
- (207) Steam has amassed a significant base of both users and developers on either side of its two-sided digital platform. As of 2021, Steam had approximately 132 million monthly active users.⁵⁵⁷ As of early 2024, there were over 57,000 publishers and approximately 90,000 games on Steam.⁵⁵⁸ Meanwhile, other potential competitors who have entered the digital PC gaming distribution market have been largely unsuccessful in gaining a significant share of users and/or developers. For example:

⁵⁵⁶ Hesse, Renata B. (2007), “Two-Sided Platform Markets and the Application of the Traditional Antitrust Analytical Framework,” *Competition Policy International* 3(1): 191–195, at 193.

Bamberger, Kenneth A. and Orly Lobel (2017), “Platform Market Power,” *Berkeley Technology Law Journal* 32(3): 1051–1092, at 1068.

See also:

Farrell, Joseph, and Paul Klemperer (2007), “Coordination and Lock-in: Competition with Switching Costs and Network Effects,” in M. Armstrong and R. Porter, eds., *Handbook of Industrial Organization*, Volume 3, Elsevier B.V, at 1974.

⁵⁵⁷ Steam, “Steam – 2021 Year in Review,” 3/8/2022, <https://store.steampowered.com/news/group/4145017/view/3133946090937137590>.

⁵⁵⁸ Video Game Insights, “Publishers Database,” 2/6/2024, <https://vginsights.com/publishers-database>.

Steam Website, Titles on Steam, <https://store.steampowered.com/search/?category1=998&os=win%2Cmac%2Clinux&supportedlang=125english&ndl=1> (accessed 2/1/2024).

- a. Itch.io, which launched in 2013, was able to create a digital platform with 200,000 games as of 2019.⁵⁵⁹ However, Itch.io struggled to build a significant user base. As of 2019, Itch.io had a user base “in the tens of thousands” as opposed to the tens of millions on the Steam platform.⁵⁶⁰ As such, in 2021, Itch.io joined EGS in order to “widen the audience of people who can discover the diverse collection of indie works that we host.”⁵⁶¹
- b. GOG Galaxy, which launched in 2014,⁵⁶² differentiates itself by recovering, restoring, and selling classic video games originally developed years ago, while also offering a curated collection of new games.⁵⁶³ In 2020, GOG offered more than 4,700 products through its platform.⁵⁶⁴ Today, GOG offers more than 9,000 products through its platform.⁵⁶⁵ However, GOG Galaxy needed to rely on another competitor to help amass a user base, becoming available for download from EGS in 2022.⁵⁶⁶ Although GOG Galaxy does not publicly release its number of users, in 2023, it had only over 1,200 publishers and developers worldwide.⁵⁶⁷

(208) Several competitors were able to initially amass nontrivial participation on both sides of the platform; however, those platforms ultimately have been unable to sustain any success or to attain/maintain a significant share of the market because of Valve’s PMFN Policy. For example, EGS was launched in late 2018 with a goal to “bring [gamers] great games, and to

⁵⁵⁹ Games Hub, “Itch.io: an Itch for Democratic Distribution,” 8/11/2020, <https://www.gameshub.com/news/features/an-itch-io-for-democratic-distribution-260888-3445/>.

⁵⁶⁰ Games Hub, “Itch.io: an Itch for Democratic Distribution,” 8/11/2020, <https://www.gameshub.com/news/features/an-itch-io-for-democratic-distribution-260888-3445/>.

⁵⁶¹ The Gamer, “Itch.io is Joining the Epic Games Store,” 4/22/2021, <https://www.thegamer.com/itch-io-epic-games-store/>.

⁵⁶² The Verge, “GOG Galaxy Takes on Steam with DRM-free Games and Optional Community Features,” 6/6/2014, <https://www.theverge.com/2014/6/6/5785858/gog-galaxy-takes-on-steam-with-drm-free-games-and-optional-community>.

⁵⁶³ Game Informer, “The Digital Archeologists: How GOG.com Rescues Games from the Dustbin of History,” 3/7/2019, <https://www.gameinformer.com/2019/03/07/the-digital-archaeologists-how-gogcom-rescues-games-from-the-dustbin-of-history>.

PC Gamer, “GOG’s 10 Year Journey to Bring Old Games Back to Life,” 1/16/2019, <https://www.pcgamer.com/gogs-10-year-journey-to-bring-old-games-back-to-life/>.

⁵⁶⁴ GOG.com, “Check These Facts and Numbers About GOG,” 4/27/2021, https://www.gog.com/news/check_these_facts_and_numbers_about_gog.

⁵⁶⁵ GOG.com Website, Games, <https://www.gog.com/en/games> (accessed 2/7/2024).

⁵⁶⁶ Epic Games Store, “GOG Galaxy is Now Available to Download from the Epic Games Store,” 10/27/2022, <https://store.epicgames.com/en-US/news/gog-galaxy-is-now-available-to-download-from-the-epic-games-store>.

⁵⁶⁷ CD Projekt, “Fact Sheet,” 4/9/2023, <https://www.cdprojekt.com/en/wp-content/uploads-en/2023/09/en-cdpir-factsheet-09-2023-1.pdf>.

give game developers a better deal [than Steam’s commission system.]”⁵⁶⁸ An article from 2018 stated: “Because of the billions of dollars its [sic] earned through Fortnite, Epic now has enough in its war chest to properly do battle with Valve[.]”⁵⁶⁹ Epic attempted to compete with Steam by offering (1) free games every week;⁵⁷⁰ (2) a lower commission rate of 12% to developers and publishers;⁵⁷¹ (3) initial free use of Epic’s gaming engine;⁵⁷² (4) exclusive deals with developers, which cut out Steam and its users for the initial releases of games, which Epic’s CEO Tim Sweeney claims has been critical to Epic gaining momentum to compete with Steam;⁵⁷³ and by (5) acquiring other game studios.⁵⁷⁴

⁵⁶⁸ Epic Games, “The Epic Games Store is Now Live,” 12/6/2018, <https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live>. (“Our goal is to bring you great games, and to give game developers a better deal: they receive 88% of the money you spend, versus only 70% elsewhere. This helps developers succeed and make more of the games you love.”)

The Verge, “Valve’s New Steam Revenue Agreement Gives More Money to Game Developers,” 11/30/2018, <https://www.theverge.com/2018/11/30/18120577/valve-steam-game-marketplace-revenue-split-new-rules-competition>. (“Normally, Valve takes around 30 percent of all game sales on Steam, with some exceptions for games from smaller developers in its Steam Direct program. That will remain the case for the first \$10 million in sales a game maker or publisher earns.”)

⁵⁶⁹ The Verge, “Why Epic’s New PC Game Store is the Steam Competitor the Industry Needed,” 12/7/2018, <https://www.theverge.com/2018/12/7/18129563/epic-games-store-fortnite-valve-steam-competition-pc-gaming-distribution>.

⁵⁷⁰ Game Rant, “Why the Epic Games Store Gives Away Free Games Explained,” 6/5/2022, <https://gamerant.com/epic-games-store-free-titles-promotion-competition/>.

⁵⁷¹ Game Informer, “Epic Launches Digital Games Store with 88 Percent Revenue Going to Developers,” 12/4/2018, <https://www.gameinformer.com/2018/12/04/epic-launches-digital-games-store-with-88-percent-revenue-going-to-developers>.

⁵⁷² Teknos Associates, The Battle for Digital Gaming Distribution, <https://www.teknosassociates.com/the-battle-for-digital-gaming-distribution/> (accessed 1/30/2023).

Valve, “GDC 2020 – Competitor Analysis,” 2020 (VALVE ANT 0019400–02, at VALVE ANT 0019400–01), available at Scott Lynch, Dep. Tr., 10/13/2023, Exhibit 156. [REDACTED]

⁵⁷³ Forbes, “Epic Games Stores Has Hit \$680 Million in Revenue, 108 Million Customers,” 1/14/2020, <https://www.forbes.com/sites/mattperez/2020/01/14/epic-games-store-has-hit-680-million-in-revenue-108-million-customers/?sh=da7f96d4b99a>. (“Sweeney on Epic Games Store exclusives as a strategy against Steam: ‘Exclusives have been critical in gaining momentum in the presence of a competitor that began 2019 with more than 90% market share. Securing exclusives for Epic means we can significantly assist developers with product funding and invest in marketing and awareness knowing that these efforts bring in new customers to our store, rather than just sending more business to the incumbent.’”)

⁵⁷⁴ Variety, “Epic Games to Acquire ‘Rocket League’ Developer Psyonix, Game Shifts to Epic Game Store,” 5/1/2019, <https://variety.com/2019/gaming/news/epic-games-to-acquire-psyonix-1203202663/>.

Rocket League, “Rocket League Going Free to Play This Summer,” 7/21/2020, <https://www.rocketleague.com/news/rocket-league-going-free-to-play-this-summer/>.

IGN, “Fall Guys Has Been Removed from Steam, But Will Still Receive Full Support,” 6/21/2022, <https://www.ign.com/articles/fall-guys-steam-delisted-will-still-recvie-full-support>.

- (209) Despite these efforts, EGS did not alter the competitive balance in the market; Steam remains the dominant firm. Valve has not lowered its prices to competitive levels, and it has not changed its anticompetitive policies. In fact, EGS struggled to be an effective competitor to Steam. While EGS grew its userbase from 108 million users in 2019 to over 230 million users in March of 2023[,]⁵⁷⁵ it failed to attract sufficient publishers/games to offer a meaningful competitive threat. Epic was only able to increase the number of games offered on EGS from 190 in 2019 to 917 in 2021.⁵⁷⁶ In 2022, this number rose to 1,548 games.⁵⁷⁷ Steam, by comparison, had approximately 1 billion registered Steam accounts in October of 2020,⁵⁷⁸ and had approximately 90,000 games on its platform as of early 2024.⁵⁷⁹
- (210) The majority of EGS’s revenue was attributable to its own games, not third-party games. In 2020, users spent \$700 million on EGS, with \$265 million of this attributable to third-party games.⁵⁸⁰ In 2021, user spending on EGS grew to \$840 million, with the amount attributable to third-party games only increasing to \$300 million.⁵⁸¹ In 2022, EGS amassed only \$820 million in user spending, with \$355 million from third-party games.⁵⁸² As of November 2023,

⁵⁷⁵ The Verge, “Epic Games Store Users Claimed 749 Million Free Games Last Year, 1/28/2021, <https://www.theverge.com/2021/1/28/22254901/epic-games-store-accounts-daily-monthly-active-concurrent-users-storefront-2020-data>. (“It announced that there are over 160 million accounts now on PC, up from the 108 million users registered in 2019.”)

Epic Games, “Epic Games Store 2022 Year in Review,” 3/9/2023, <https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review>.

⁵⁷⁶ Epic Games, “Epic Games Store 2021 Year in Review,” 1/27/2022, <https://store.epicgames.com/en-US/news/epic-games-store-2021-year-in-review>.

Epic Games, “Epic Games Store 2020 Year in Review,” 1/28/2021, <https://store.epicgames.com/en-US/news/epic-games-store-2020-year-in-review>.

⁵⁷⁷ Epic Games, “Epic Games Store 2022 Year in Review,” 3/9/2023, <https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review#:~:text=There%20are%20now%20over%20230,up%20from%20last%20year's%2062M>.

⁵⁷⁸ Valve, “Joint Business Review,” 10/2020 (VALVE_ANT_0052792–2829, at VALVE_ANT_0052816).

⁵⁷⁹ Steam Website, Titles on Steam, <https://store.steampowered.com/search/?category1=998&os=win%2Cmac%2Clinux&supportedlang=128english&ndl=1> (accessed 2/1/2024).

⁵⁸⁰ Epic Games, “Epic Games Store 2020 Year in Review,” 1/28/2021, <https://store.epicgames.com/en-US/news/epic-games-store-2020-year-in-review>.

⁵⁸¹ Epic Games, “Epic Games Store 2021 Year in Review,” 1/27/2022, <https://store.epicgames.com/en-US/news/epic-games-store-2021-year-in-review>.

⁵⁸² Epic Games, “Epic Games Store 2022 Year in Review,” 3/9/2023, <https://store.epicgames.com/en-US/news/epic-games-store-2022-year-in-review>.

EGS was still not profitable.⁵⁸³ In comparison, in 2021, Steam's platform had total third-party user sales of [REDACTED]—more than [REDACTED] EGS's third-party user sales in the same year.⁵⁸⁴

[REDACTED]
[REDACTED].⁵⁸⁵ Epic has struggled to gain enough developers to grow its network to compete with Steam, and still only makes up a small fraction of the market (see Section 4.2.3 and Attachment E-1). Steam continues to dominate the market.

- (211) Discord, a popular voice, video, and text communication service with 150 million monthly active users, launched its own gaming platform in 2018.⁵⁸⁶ In December 2018, Discord announced that it would only charge a 10% commission rate, allowing developers to keep 90% of revenue from their games.⁵⁸⁷ In response to this, Valve employees discussed the changing landscape of revenue share on PC gaming platforms, such as EGS and Discord.⁵⁸⁸ However, Discord, like EGS, did not succeed. It was unable to take a significant share of the market, and discontinued its platform with third-party game developers, as it “was apparently not making Discord or the third-party game developers much money.”⁵⁸⁹
- (212) Indeed, this low-cost-to-publisher platform approach taken by EGS and Discord is typically an avenue available to potential entrants to compete with an entrenched incumbent in a

⁵⁸³ The Verge, “Epic v. Google: Everything We’re Learning Live in Fortnite Court,” 12/11/2023, <https://www.theverge.com/23945184/epic-v-google-fortnite-play-store-antitrust-trial-updates/archives/24>. (“In case you’re keeping track, Epic Games Store boss Steve Allison says on the witness stand his store isn’t profitable yet.”)

Forbes, “Tim Sweeney’s Epic Games Store is Still Losing Money After Five Years,” 11/7/2023, <https://www.forbes.com/sites/paultassi/2023/11/07/tim-sweeneys-epic-games-store-is-still-losing-money-after-five-years/?sh=4bfcc692568e>. (“Epic is heading back to the courtroom for another one of its cases against megacorps, this time, Google, where new testimony has revealed that the Epic Games Store is still not profitable five years after its original launch in 2018.”)

⁵⁸⁴ [REDACTED]

See Attachment D-3.

⁵⁸⁵ Epic, Units Sold Data, c. 2022 (EPIC_VALVE_0000392.xlsx).

⁵⁸⁶ Discord Website, About Discord, <https://discord.com/company> (accessed 6/14/2023).

Game Developer, “Discord Turns Retailer with Beta Launch of Game Storefront,” 8/9/2018, <https://www.gamedeveloper.com/business/discord-turns-retailer-with-beta-launch-of-game-storefront>.

⁵⁸⁷ GamesIndustry.biz, “Discord Store Offering Developers a 90/10 Revenue Split,” 12/14/2018, <https://www.gamesindustry.biz/discord-store-offering-developers-a-90-10-revenue-split>.

⁵⁸⁸ Valve, Emails Regarding Revenue Share, 1/27/2019–2/5/2019, (VALVE ANT 0489888–890, at VALVE ANT 0489888), available at Scott Lynch, Dep. Tr., 10/12/2023, Exhibit 137. [REDACTED]

⁵⁸⁹ Business of Apps, “Discord Revenue and Usage Statistics (2023),” 1/9/2023, <https://www.businessofapps.com/data/discord-statistics/>.

competitive market unencumbered by an enforced PMFN.⁵⁹⁰ However, with Steam’s PMFN Policy firmly in place, while publishers may benefit from the low fees on these platforms, the users *do not* gain cost savings through lower game prices. That is, if a publisher were to publish its game on Steam and a competing low-cost platform, *e.g.*, EGS, the price parity requirement of the PMFN Policy prevents that publisher from passing through those cost savings to a customer in the form of a lower game price. Without that lower price, users have no incentive to move to the low-cost option. Absent the PMFN Policy, Steam would need to compete on the merits across all relevant dimensions for developers and users. The PMFN Policy prevents that from happening.

- (213) Thus, Valve’s monopoly power and network effects that are maintained through its PMFN Policy prevent new platforms from competing effectively. They can also lead to those platforms’ publishers having to *rely* on Steam’s platform and large user base to stay afloat. For example, in 2009, Ubisoft launched an online platform (formerly named Uplay), which in 2013, began offering third party games on the platform “to give Uplay’s 50 million users more option for buying and playing Ubisoft games.”⁵⁹¹ While the Ubisoft platform was able to overcome initial barriers to entry and amass millions of users through the release of *Assassin’s Creed 2*, which was released with the Uplay platform,⁵⁹² Ubisoft eventually expanded its game offerings on Origin, Steam, and EGS.⁵⁹³ In 2019, Ubisoft reversed course and stopped releasing new games on Steam, instead focusing only on EGS and Ubisoft Store.⁵⁹⁴ Ubisoft claimed that Steam’s business model was “unrealistic” and “doesn’t reflect where the world is today in terms of

⁵⁹⁰ See further discussion of low-cost platform entry to a market with a PMFN in Section 7.2.1.

⁵⁹¹ Polygon, “Ubisoft Now Selling Third-Party Games on Uplay Shop and Its Own Games on EA’s Origin,” 2/19/2013, <https://www.polygon.com/2013/2/19/4001836/ubisoft-uplay-shop-third-party-games-ea-origin-chris-early-interview>.

⁵⁹² Polygon, “Ubisoft Now Selling Third-Party Games on Uplay Shop and Its Own Games on EA’s Origin,” 2/19/2013, <https://www.polygon.com/2013/2/19/4001836/ubisoft-uplay-shop-third-party-games-ea-origin-chris-early-interview>.

⁵⁹³ Polygon, “Ubisoft Now Selling Third-Party Games on Uplay Shop and Its Own Games on EA’s Origin,” 2/19/2013, <https://www.polygon.com/2013/2/19/4001836/ubisoft-uplay-shop-third-party-games-ea-origin-chris-early-interview>.

Polygon, “The Division 2 Coming to Epic Games Store, Skipping Steam,” 1/9/2019, <https://www.polygon.com/2019/1/9/18174375/division-2-pc-epic-games-store-steam>.

Engadget, “Ubisoft Shares Dark Messiah of M&M with Steam,” 8/31/2006, <https://www.engadget.com/2006-08-31-ubisoft-shares-dark-messiah-of-mandm-with-steam.html>.

⁵⁹⁴ Game Spot, “Ubisoft Explains Why It Doesn’t Release Games on Steam,” 8/29/2019, <https://www.gamespot.com/articles/ubisoft-explains-why-it-doesnt-release-games-on-st/1100-6469502/>.

games distribution.”⁵⁹⁵ However, this strategy was unsuccessful and ultimately short-lived, as several Ubisoft exclusives were later released on Steam.⁵⁹⁶

(214) Ubisoft’s reliance on releasing its games on Steam despite having over 117 million active players across consoles and PC in 2020 demonstrates the lack of meaningful competition to Steam in the market for third-party digital PC game distribution via platform.⁵⁹⁷ Despite Ubisoft’s ability to enter the market and Steam’s supracompetitive prices, it could not meaningfully compete without offering its own games on Steam’s platform. Moreover, the need to distribute its games through Steam *prevented* Ubisoft from competing with Steam on game price on its *own* platform because of Steam’s PMFN Policy. Thus, a competitive challenge to Steam’s supracompetitive pricing was thwarted.

(215) EA, a major game publisher responsible for popular game series such as *The Sims* and *Battlefield*,⁵⁹⁸ is another example of a platform that attempted and failed to compete against Steam. [REDACTED]

⁵⁹⁵ New York Times, “Fortnite Maker Wants to Sell More Games, and Build a Platform to Do It,” 8/13/2020, <https://www.nytimes.com/2019/08/27/business/steam-epic-games-store.html>.

⁵⁹⁶ Valve, Emails Discussing a GameDiscoverCo Article, 11/22/2022 (VALVE_ANT_1229059–067, at VALVE_ANT1229064). (“We ran the rumors a few times, but they’re true – Ubisoft is returning to Steam, initially with Assassin’s Creed Valhalla (out Dec. 6th). But they told Eurogamer they’ll provide a ‘consistent player ecosystem through Ubisoft Connect’, and will be adding titles including Anno 1800 & Roller Champions to Valve’s platform soon.”)

⁵⁹⁷ Game Developer, “Ubisoft Beats Q4 Forecasts, Thanks in No Small Part to Player Recurring Investment,” 5/14/2020, <https://www.gamedeveloper.com/business/ubisoft-beats-q4-forecasts-thanks-in-no-small-part-to-player-recurring-investment>.

⁵⁹⁸ Electronic Arts, Form 10-K, 2022, at 3. (“Electronic Arts is a global leader in digital interactive entertainment. We develop, market, publish and deliver games, content and services that can be experienced on game consoles, PCs, mobile phones and tablets. . . . Our portfolio includes brands that we either wholly own (such as Apex Legends, Battlefield, and The Sims) or license from others (such as Madden NFL, Star Wars, and the 300+ licenses within our global football ecosystem).”)

⁵⁹⁹ Valve, Emails Regarding [REDACTED], 6/15/2011 (VALVE_ANT_2715478–79, at VALVE_ANT_2715478), available at Scott Lynch, Dep. Tr., 10/12/2023, Exhibit 138.

⁶⁰⁰ Valve, Emails Regarding [REDACTED], 6/15/2011 (VALVE_ANT_2715478–79, at VALVE_ANT_2715478), available at Scott Lynch, Dep. Tr., 10/12/2023, Exhibit 138.

EA ultimately returned to distributing their games on Steam.⁶⁰⁸ In 2020, EA began relisting its games on Steam, taking a more “open” approach and claiming this was “the most player-first thing [they could] do.”⁶⁰⁹ EA’s Senior Vice President commented on the return, stating that “we are game makers, and our aspiration is to connect as many people as we can to the great games that we built[,]” thus “we want to be [on Steam] where the players are.”⁶¹⁰ In 2022, when EA launched the EA App, EA stopped selling games from third-party publishers.⁶¹¹ Another competitor was lost in the market.

- (217) EA’s decision to return to publishing its games on Steam also meant that Steam users now had access to additional third-party PC games, further encouraging users to choose Steam over other platforms. As was the case with Ubisoft, when EA relisted its games on Steam, it was then also bound by Valve’s PMFN Policy. EA thus could not compete on price or content with Steam, *even with its own games on its own platform*. EA’s reliance on Steam demonstrates the lack of meaningful competition to Steam and that the PMFN Policy prevented effective competition with Steam.

Digital Trends, “EA Origin Has Been Replaced With a New, Faster PC App,” 10/7/2022, <https://www.digitaltrends.com/gaming/ea-origin-replaced-app/>. (“Origin was EA’s exclusive PC launcher for its titles first launched in 2011. It was intended to compete with other digital PC storefronts such as Steam, though it eventually integrated with its competitor to sell their titles on that service. Origin, however, was still required to run EA titles even if bought on Steam. Despite accumulating over 50 million registered users, the service was heavily criticized and maligned by the PC community due to security flaws and suspicions of spying on players.”)

For comparison, Steam had approximately 1 billion registered Steam accounts by 2020. See:

Valve, “Joint Business Review,” 10/2020 (VALVE_ANT_0052792–2829, at VALVE_ANT_0052816).

⁶⁰⁸ Valve, Emails Regarding EA on Steam, 10/29/2019–10/30/2019 (VALVE_ANT_0058279–281, VALVE_ANT_0058280–281).

Valve, Emails Regarding Valve and EA’s Partnership, 9/16/2019–9/20/2019 (VALVE_ANT_0059430–31, at VALVE_ANT_0059430–31).

See also: Scott Lynch, Dep. Tr., 10/12/2023, at 193:23–194:4. (“Q. There came a time that EA did bring their major titles back on Steam; right? A. Yes, they started releasing some of their games they hadn’t released on Steam and probably did some new -- new releases too. Q. That was in September of 2019? A. Yeah, that seems around the timeframe.”)

⁶⁰⁹ Games Industry.Biz, “EA Puts First Wave of Games Back on Steam,” 6/5/2020, <https://www.gamesindustry.biz/ea-puts-first-wave-of-games-back-on-steam>.

Games Industry.Biz, “EA Returns to Steam,” 10/29/2019, <https://www.gamesindustry.biz/ea-returns-to-steam>.

⁶¹⁰ The Verge, “EA Games Are Returning to Steam Along with the EA Access Subscription Service,” 10/29/2019, <https://www.theverge.com/2019/10/29/20937055/ea-games-steam-access-subscription-service-pc-storefront-jedi-fallen-order-sales>.

⁶¹¹ Electronic Arts, “Upcoming Changes to the EA Origin Catalog,” c. 6/2022, <https://www.ea.com/ea-pc-third-party-titles-2022>.

- (218) In 2012, Microsoft launched a digital distribution platform known then as the Windows Store.⁶¹² However, in 2019, Microsoft decided to distribute games through Valve's Steam platform.⁶¹³ Even Microsoft, one of the world's largest software makers,⁶¹⁴ could not succeed on its own in the PC desktop gaming distribution market without offering games on Steam, given the need to publish its games where the vast majority of users are. Even when facing Steam's supracompetitive prices, Microsoft needed to rely on Steam because of Steam's dominance. Microsoft's reliance on Steam allowed Valve to maintain or grow its monopoly power in the relevant market. Once Microsoft brought its games (and more users) back to Steam, Valve's PMFN Policy protected Steam from competition from Microsoft.
- (219) These examples show that the PMFN Policy enforcement protects Steam from meaningful competitive threats by preventing those competing platforms from building the network effects that would allow those platforms to challenge Steam. Valve's PMFN Policy prevented those publishers from competing on price to attract users away from Steam. Without the ability to use price as a means to attract users and the corresponding difficulty in attracting developers, all three platforms (Uplay, Origin, and the Window's Store) were unable to compete effectively and provide a competitive challenge to Steam.⁶¹⁵

⁶¹² PCMag, "13 New features in Windows 8 Consumer Preview," 2/29/2012, <https://www.pcmag.com/archive/13-new-features-in-windows-8-consumer-preview-294819>.

Tech Target, "Microsoft Store," 2/2022, <https://www.techtarget.com/searchmobilecomputing/definition/Windows-Store>.

⁶¹³ The Verge, "Microsoft Will Distribute More Xbox Titles Through Steam and Finally Support Win32 Games," 5/30/2019, <https://www.theverge.com/2019/5/30/18645250/microsoft-xbox-game-studios-publishing-valve-steam-32-bit-windows>.

⁶¹⁴ Emergen Research, "Top 9 Companies Offering Blockchain Technology in BFSI in the World," 4/20/2023, <https://www.emergenresearch.com/blog/top-9-companies-offering-blockchain-technology-in-bfsi-in-the-world>. ("Founded in 1975, Microsoft Corporation is considered as one of the world's largest software maker and is one of the Big Five companies in the U.S. IT industry.")

⁶¹⁵ Not only do some third-party digital PC game distribution platforms need to put their games on Steam in order to maintain their respective platforms, but some third-party digital PC game distribution platforms, especially the non-gaming platforms, are reliant on Steam Keys and other keys, making them beholden to Steam. Steam has discretion in how many Steam Keys it will grant to publishers, and Steam Keys have been denied if a publisher prices its games too low relative to Steam, again stopping publishers from competing on price due to the PMFN Policy. See Sections 5.1 and 5.2.

For example, Humble relies on Steam (and other third-party distributors) for the actual hosting and distributing of games. Instead of purchasing and playing the game directly through Humble, users purchase keys to games on the Humble Store that need to be redeemed on a gaming platform such as Steam, Ubisoft Connect, or GOG. See:

Humble Website, What is Humble Bundle, https://www.humblebundle.com/about?hmb_source=navbar (accessed 6/13/2023).

See:

Valve, Emails Regarding [REDACTED], 1/30/2019–2/11/2019 (VALVE_ANT_0471790–95, at VALVE_ANT_0471791).

6.3. Reduction in variety, quality, and innovation

- (220) Steam’s anticompetitive conduct has led to a reduction in the variety of platform features available to consumers and game developers. Platforms are differentiated: each platform must make decisions about the overall aesthetic of their website or app, how reviews are handled, which games are added to their platform, how those games are displayed to consumers, and what type of content moderation (if any) exists.⁶¹⁶ Competition would yield a set of platforms with different features, attributes, and quality.⁶¹⁷ Valve’s conduct prevents viable alternatives from entering the market and offering publishers and consumers choices and the prospect of innovation.
- (221) As the dominant platform, Steam is able to “shape the nature of competition” in the market for third-party digital PC game distribution via platforms.⁶¹⁸ Steam’s choices about the platform influence the types of products consumers choose and developers create.⁶¹⁹ Because Valve insulates itself from meaningful competition from other platforms that present consumers and developers with different experiences, the range of choices in the relevant market is limited and opportunities for innovation are stifled.
- (222) Steam’s PMFN Policy prevents developers from differentiating themselves via price and/or content, making it a challenge for developers to induce users to join new platforms with price and/or content incentives. This limits the entry and growth of competing platforms that may offer different features or qualities that could be preferential to certain publishers and/or

⁶¹⁶ PCMag Website, The Best Places to Buy and Rent PC Games Online in 2023, <https://www.pcmag.com/picks/the-best-places-to-buy-and-rent-pc-games-online> (accessed 11/17/2023).

See also the list of examples to follow in the rest of this section.

⁶¹⁷ Many platform features are mutually exclusive, e.g., enabling comments. If users do not all agree on which choice is best, a single platform like Steam cannot mechanically meet all of those user preferences. See also:

Valve, Emails Regarding Boston Developer Meeting, 10/5/2018 (VALVE_ANT_0054709–14, at VALVE_ANT_0054712), available at Alden Kroll, Dep. Tr., 11/16/2023, Exhibit 242. (“There were some big generalizations here, but there was also an acknowledgement that there is no singular ‘Steam audience’ - that Steam’s audience is made up of millions of people with different preferences.”)

⁶¹⁸ Johnson, Justin, Andrew Rhodes, and Matthijs Wildenbeest (2023), “Platform Design When Sellers Use Pricing Algorithms,” *Econometrica* 91(5): 1841–1879, at 1841. (“It is increasingly recognized that this ‘regulatory power’ of platforms allows them to shape the nature of competition on their marketplaces.”)

⁶¹⁹ Johnson, Justin, Andrew Rhodes, and Matthijs Wildenbeest (2023), “Platform Design When Sellers Use Pricing Algorithms,” *Econometrica* 91(5): 1841–1879, at 1841. (“It is increasingly recognized that this ‘regulatory power’ of platforms allows them to shape the nature of competition on their marketplaces.”)

Dinerthe estein, Michael et al. (2018), “Consumer Price Search and Platform Design in Internet Commerce,” *American Economic Review* 108(7): 1820–1859, at 1820. (“The platform design, the process that helps potential buyers on the internet navigate toward products they may purchase, plays a critical role in reducing search frictions and determining market outcomes.”)

gamers. As discussed herein, the challenge for developers is to find platforms where gamers can easily find, download, and play their games. While publishers are able to list on different platforms, ultimately, they need to be on Steam because of its user base. Then, by joining Steam and being bound by the PMFN Policy, these publishers can no longer compete on price and/or content on other platforms, effectively eliminating meaningful competition to Steam, and limiting the range of effective choices for both users and developers.

6.3.1. Reduction in platform variety and quality

(223) Many users and developers are dissatisfied with the quality of Steam’s platform and would prefer more choice in PC desktop game platforms.⁶²⁰ For example, in a thread on Steam

⁶²⁰ For additional examples, see:

Augusta Butlin, Dep. Tr., 10/11/2023, at 163:22–164:13. (“Q. In 2018, did you hear at all that there was a perception among developers that Steam hasn’t had to compete? A. This document is around 2018. I wouldn’t say that Steam hasn’t had to compete. But I do think, according to this document, that there was some things we could do to make our partner’s lives better. Q. Had you heard that, in this timeframe, 2018, that Steam had gotten lazy? A. I don’t -- I don’t know if lazy came up. Q. You never heard that Steam either didn’t have to compete or was lazy, that that perception was out there? A. I think, according to this document, there were some perceptions that we could be doing a better job.”)

Valve, Emails Regarding Review System, 10/23/2014 (VALVE_ANT_2417590–597, at VALVE_ANT_2417590, VALVE_ANT_2417595). (In an email to Valve, a publisher states that “we feel [there] is a significant flaw in the current ‘was this review helpful?’ system of review promotion [on Steam]. This is having a very real impact on our studio, and we want to open an [sic] conversation with you about fixing this.” The publisher further notes that “[u]nfortunately, I’ve noticed something very discouraging about how reviews for our game are surfaced to potential buyers, and it points to what feels like a major flaw in the system, one which disproportionately promotes negative reviews and hides positive ones[.]” and “it feels like the game’s growth and success may be artificially held back by a single frustrating Steam store ‘bug[.]’”)

Valve, Steam Technical Issue, 12/27/2015 (VALVE_ANT_1847812–831, at VALVE_ANT_1847812–813, VALVE_ANT_1847815, VALVE_ANT_1847818, VALVE_ANT_1847820). (In a thread on Steam Community, some users complained about Steam Store’s browsing malfunction.)

Valve, Emails Regarding Steam’s Review System, 6/18/2018–6/21/2018 (VALVE_ANT_0501377). (An email from a Steam user criticizes Steam’s review system: “Note that most user has [sic] posted the same formulaic review multiple times on each of the DLC items. It’s a clear case of someone buying positive reviews. . . . Steam has a massive problem with fake reviews.”)

Valve, Emails Regarding Steam’s Store Front, 7/10/2018 (VALVE_ANT_0418237). (An email from a Steam user describes concerns with Steam’s game offerings and content moderation: “I, like many others, have become concerned with the current status of the [S]team store front. The lack of quality control is concerning.”)

Valve, Appendix H: Comments on Operation Tell Valve All the Things, undated (VALVE_ANT_2371141–173, at VALVE_ANT_2371145). (“I wish I had the option to contact valve directly, and not just through forums. We are partners[,] not one of millions of customers, I think we deserve that. Sometimes we have questions that don’t get answered adequately on the forums.”)

Valve, Emails Regarding Technical Issue, 6/13/2023–6/19/2023 (VALVE_ANT_2906634–637, VALVE_ANT_2906635–636). (“[W]e were seeing CAPTCHA failures fairly consistently last week”; “[W]hile this does massively impact us when our users need to reset their passwords, unfortunately we also see CAPTCHA failures a lot when creating new accounts too[.]”)

Adam Klaff, Dep. Tr., 11/14/2023, at 94:22–95:5, 128:7–21. (“Q. What are some of those common issues that come up with developers? A. Let me think. One would be visibility -- questions about visibility in an upcoming seasonal sale for their game. Another might be -- I’m kind of lumping these together, but questions about interpreting data from dash – different dashboards that we have in our internal tools.”) (“Q. Okay. I think you were talking before when we said, like, some

Community, users complained about broken games, with one user posting “[w]hen are we as consumers going to stand up and say enough is enough” while another user agrees that “Steam should not allow for broken games.”⁶²¹ Another user posts that “Steam sits proudly in their ivory tower selling product after product without giving any refunds for broken game after broken game. Stacks of cash off the backs of unsuspecting consumers. . . . Article after article has been written about these broken products sold to people without so much as a peep from Valve on what measures it intends to do about the problem.”⁶²² In discussion of alternatives to Steam, many users commented on their dissatisfaction with Steam’s features and desire for an alternative platform, making remarks like “it seems a lot of people are searching for alternatives [to Steam;]” “[t]he only reason I use Steam is to purchase games that are unavailable elsewhere i.e. I am forced to use it if I want xyz title[;]” “[w]hen a company (Steam) has a monopoly on the entire PC gaming industry, there’s very little alternative for any potential competition to pull in customers.”⁶²³ In a competitive market, dissatisfied customers have alternatives to consider. Further, in a competitive market, even satisfied customers may want to explore other options. Valve’s policies that prevent entrants from having a reasonable opportunity to compete on their differentiation prevent consumers from having choices and arguably higher quality.

(224) In a competitive market, a platform like Steam would have to meet the needs of its customers, including publishers. Publishers have complained about issues with Steam. For example, an internal Valve document lists several grievances from game developers, including:⁶²⁴

- “Sales reporting site is slow and painful.”

common issues that tend to be raised by developers to you, that visibility might be one of them. Would visibility play into what we’re talking about in kind of where games are visible to potential customers? A. Well, there’s -- like I -- I think I said there’s tens of thousands of games on Steam and there’s only so many capsules you can fit on the home page, so there’s a lot of interest in getting your games seen there. So developers are very, very interested to know how they can get their games seen by more people. Always.”

Kotaku, “Valve is Not Psyched They Got An ‘F’ in Customer Service,” 3/13/2015, <https://kotaku.com/valve-is-not-psyched-they-got-an-f-in-customer-service-1691308332>.

Better Business Bureau, Valve Corporation: Complaints, <https://www.bbb.org/us/wa/yarrow-point/profile/online-gaming/valve-corporation-1296-27030704/complaints> (accessed 12/17/2023).

⁶²¹ Valve, “When Are We as Consumers Going to Stand Up and Say Enough Is Enough,” 11/25/2014 (VALVE_ANT_2324356–367, at VALVE_ANT_2324356–357).

⁶²² Valve, “When Are We as Consumers Going to Stand Up and Say Enough Is Enough,” 11/25/2014 (VALVE_ANT_2324356–367, at VALVE_ANT_2324363).

⁶²³ Valve, “Alternatives to Steam?,” 10/31/2019 (VALVE_ANT_2078524–554, at VALVE_ANT_2078524, VALVE_ANT_2078528, VALVE_ANT_2078539).

⁶²⁴ Valve, Emails Regarding Boston Developer Meeting, 10/5/2018 (VALVE_ANT_0054709–14, at VALVE_ANT_0054712–13), available at Alden Kroll, Dep. Tr., 11/16/2023, Exhibit 242.

- “Devs would like to be able to hand out coupon codes for their games at game shows to encourage players to buy the game on steam.”
- “Devs would like [Valve] to build tech support ticketing into Steam. Obvious from the store page alongside the option of writing a review.”
- “Pretty much everyone agreed that Steam wasn’t worth 30%”
- “Perception [among developers] is that Steam hasn’t had to compete, and thus has gotten lazy and hasn’t had to change revenue share[.]”

(225) As another example, in 2017, Steam launched Steam Direct with a “direct and predictable submission process” to replace Greenlight, Steam’s legacy indie game approval process that relied on user voting.⁶²⁵ [REDACTED]

[REDACTED]⁶²⁶ A news publication added that Steam’s change would introduce a discoverability problem, whereby “low-effort, broken games” could “[overwhelm] Steam.”⁶²⁷ Thus, while the *quantity* of games on Steam may have increased, this action has led to a decrease in the discoverability of games,⁶²⁸ which harms publishers’ ability to reach users and

⁶²⁵ Valve, Steam Business Update, 2017 (VALVE_ANT_1159767.pptx, at slide 21). (“Steam Direct[.] Next evolutionary step of Steam Greenlight[.] Provide a direct and predictable submission process for new Steam developers[.]”)

Polygon, “Valve Shuts Down Steam Greenlight, Replacing it Next Week, 6/6/2017, <https://www.polygon.com/2017/6/6/15749692/steam-direct-launch-date-valve-greenlight>. (“Valve has closed Steam Greenlight, the service on which Steam users would vote on indie games to determine which titles would be published on the platform’s marketplace. Its replacement, Steam Direct, will launch in a week on June 13, the company announced today.”)

⁶²⁶ Valve, “Evolving Steam,” undated (VALVE_ANT_0054558–59, at VALVE_ANT_0054558).

⁶²⁷ Wolfire, GamesBeat Article Regarding Steam, 2/13/2017 (WOLFIRE_00000168–73, at WOLFIRE_00000170), available at Alden Kroll, Dep. Tr., 11/16/2023, Exhibit 302.

⁶²⁸ Wolfire, GamesBeat Article Regarding Steam, 2/13/2017 (WOLFIRE_00000168–73, at WOLFIRE_00000169), available at Alden Kroll, Dep. Tr., 11/16/2023, Exhibit 302.

Discoverability has been a point of dissatisfaction for publishers on Steam. See, for example:

Valve, Emails Regarding Steam Recommendation, 3/21/2013–3/22/2019 (VALVE_ANT_2422879–83, at VALVE ANT 2422879–81). (In an email regarding changes to Steam’s recommendation algorithm, a Valve employee

[REDACTED]

Dark Catt, “75 Steam Statistics: 2020/2021 Facts, Market Share & Data Analysis[,] 5/15/2020 (DarkCatt_0000039–047, at DarkCatt_0000043). (“Following the platform’s success, a lot of developers have devoted their creations to satisfy Steam’s built-in market, which has worked well for legacy titles. However, indie developers have found themselves in a quagmire as the sales of smaller games have significantly dropped in 2019. This points to the crowded space in which their games are hosted, coupled with the revenue share taken by Steam, and the possible flawed approach to pricing. A brunt of Steam’s revenue comes from only a handful of titles.”)

Valve, Emails Regarding Valve Roundtable, 7/17/2020–7/21/2020 (VALVE_ANT_0537011–013, at VALVE_ANT_0537011). (A Valve Email from a game developer expresses dissatisfaction with the algorithm and how Steam recommends games: “Now that the algorithm appears to have determined that our games are not of interest to people, is there a way to

make game sales. This also affects users’ ability to search for high quality games. Unhappy publishers and users that are affected by these platform-wide decisions by Valve have no alternative platforms to consider, and Valve is not pressured by competition in the market to make improvements to Steam.

- (226) Chris Boyd, Valve’s Software Developer, testified that Steam receives feedback from developers regarding additional features they want from Steam and/or reactions to existing ones.⁶²⁹ Mr. Boyd acknowledged in his deposition and in a 2017 interview that “Valve has a reputation for ‘bad support’, sometimes taking more than 30 days for a response[.]”⁶³⁰ One of the major problems with Valve’s support system was that responses to support tickets were “slow and wanted users to get faster responses[.]” as well as inefficiency, “quality of responses[.]” and “how the tickets were answered.”⁶³¹ Competition does not compel Valve to improve Steam.

‘reignite’ the visibility[?] What options do we have other than deleting the application and making a brand new game with the same name?”)

- ⁶²⁹ Chris Boyd, Dep. Tr., 11/17//2023, at 18:19–19:3. (“Q. And you were hired at Valve in the role of a software developer, correct? A. Correct. Q. Do you have a title at Valve? A. I don’t believe so. Q. So what determines the fact that you’re a software developer at Valve? Is that just because you happen to write code or does Valve classify you as a software developer? A. I happen to write code.”)

Chris Boyd, Dep. Tr., 11/17//2023, at 30:6–19. (“Q. In order to get a sense of what features partners want or how partners are reacting to features on the Steam platform, do Steam [software] developers typically receive that type of feedback through the Steam business team? A. That is one of the ways that [Steam] developers can get feedback, yes. Q. Is there a more common way that they get that type of feedback? A. Just about -- in general, just about Steam features? Q. Correct. A. There -- I think there’s lots of ways that developers get feedback about features, so . . .”)

- ⁶³⁰ Game Revolution, “Valve Interview Pt 4: Devs On Steam Greenlight Replacement, Discovery Updates and Support,” 2/10/2017, <https://www.gamerevolution.com/originals/13619-valve-interview-pt-4-devs-on-steam-greenlight-replacement-discovery-updates-and-support>, available at Chris Boyd, Dep. Tr., 11/17//2023, Exhibit 309. (“The last part of the discussion was focused on Steam Support. After acknowledging that Valve has a reputation for ‘bad support’, sometimes taking more than 30 days for a response, Chris Boyd shared that recently there has been a lot of attention paid to the support process, starting with ‘significantly expanding the size of the support team.’”)

Chris Boyd, Dep. Tr., 11/17//2023, at 40:15–41:22. (“Q. Setting aside what the exact words you used were, in February 2017, did Valve have bad support or good support or somewhere in between? A. As I tried to say before, I’m not sure what bad or good is here. I’m just saying that it was not up to the standard that -- that we wanted support to be at for our users. Q. And at that time, some support tickets took over 30 days to receive a response, correct? A. That was my understanding, yes. Q. What aspects of Valve support did you feel -- did you feel needed to be improved at that time? A. Oh, specific -- multiple things, but specifically the response times that you just noted. Q. Anything else? A. Sure. The -- the quality of responses was another example. Q. What else? A. The process of how the tickets were answered. Q. In what respect did that process need to be improved? A. One of them was efficiency. Q. Can you explain that? A. Sure. It’s -- it took -- as part of the -- the -- my memory was the process itself wasn’t great with -- in multiple areas, and so it just contributed that long response time that we had. Q. So in what respect did the process need to be more efficient? A. One of the ways was -- was just how those are -- those tickets were categorized and routed.”)

- ⁶³¹ Chris Boyd, Dep. Tr., 11/17//2023, at 44:4–11. (“Q. So what did Valve identify as the problem areas that needed to be improved in order to improve the support process? A. If I understand what you’re asking me correctly is what we’ve already discussed, one of the problem areas was that responding to tickets was -- was slow and wanted users to get faster responses.”)

Chris Boyd, Dep. Tr., 11/17//2023, at 40:15–41:22. (“Q. Setting aside what the exact words you used were, in February 2017, did Valve have bad support or good support or somewhere in between? MR. SKOK: Object to the form. A. As I tried

- (227) Surveys conducted by game developer, Lars Doucet, provide a more comprehensive view of developer’s opinions of Steam.⁶³² According to the survey, the samples consist of roughly 2.3% and 1.4% of all developers on Steam.⁶³³
- (228) The survey responses reinforce the point that Steam cannot provide enough variety in platform design. Attachment F-1 presents the data collected from the survey. The responses demonstrate that many developers have complaints about the general quality of Steam and how it functions. For example, 70% of developers agree that “bug reporting / technical support should be built into Steam/Steamworks. Filter issues that are Steam issues to Steam support team instead of me[,]” and 63% agreed that Valve should “[f]ix that Steam doesn’t start downloading patches right away[.]”⁶³⁴ The survey responses also highlight that developers want different or additional platform features. Of developers surveyed, 77% agreed that “[d]evs should be able to have one unified landing page for all their games[,]” and 73% agreed that Valve should “[p]rovide A/B test functionality for [Steam] store pages[.]”⁶³⁵

to say before, I’m not sure what bad or good is here. I’m just saying that it was not up to the standard that -- that we wanted support to be at for our users. Q. And at that time, some support tickets took over 30 days to receive a response, correct? A. That was my understanding, yes. Q. What aspects of Valve support did you feel -- did you feel needed to be improved at that time? A. Oh, specific -- multiple things, but specifically the response times that you just noted. Q. Anything else? A. Sure. The -- the quality of responses was another example. Q. What else? A. The process of how the tickets were answered. Q. In what respect did that process need to be improved? A. One of them was efficiency. Q. Can you explain that? A. Sure. It’s -- it took -- as part of the -- the -- my memory was the process itself wasn’t great with -- in multiple areas, and so it just contributed that long response time that we had. Q. So in what respect did the process need to be more efficient? A. One of the ways was -- was just how those are -- those tickets were categorized and routed.”

⁶³² PC Gamer, “The Biggest Issues with Steam in 2017, According to 230 Developers,” 10/27/2017, <https://www.pcgamer.com/the-biggest-issues-with-steam-in-2017-according-to-230-developers/>.

The survey is not a representative sample, favoring developers who are English speaking, well-connected, active on social media, know Lars Doucet, and are independent or small rather than AAA publishers, and those developers that are from North America, the UK, or Europe. See:

Lars Doucet, “Operation: Tell Valve All The Things, v 2.0,” 10/10/2017, at 6, available at: <https://www.pcgamer.com/the-biggest-issues-with-steam-in-2017-according-to-230-developers/>.

For specific survey results, see:

Lars Doucet, “Operation: Tell Valve All The Things, v 2.0,” 10/10/2017, at Appendix I, available at: https://docs.google.com/spreadsheets/d/1b2-u9sYxNfwU8WzqGiPw4CEtYGKZrZaTibqZ1R83_Mw/edit?pli=1#gid=0.

⁶³³ There were a total of 232 (survey 1) and 144 (survey 2) respondents in the two surveys conducted.

Lars Doucet, “Operation: Tell Valve All The Things, v 2.0,” 10/10/2017, at 6, available at: <https://www.pcgamer.com/the-biggest-issues-with-steam-in-2017-according-to-230-developers/>.

For specific survey results, see:

Lars Doucet, “Operation: Tell Valve All The Things, v 2.0,” 10/10/2017, at Appendix I, available at: https://docs.google.com/spreadsheets/d/1b2-u9sYxNfwU8WzqGiPw4CEtYGKZrZaTibqZ1R83_Mw/edit?pli=1#gid=0.

⁶³⁴ Attachment F-1.

⁶³⁵ Attachment F-1.

- (229) Second, other responses demonstrate that developers are unsatisfied with the mechanisms Steam uses to guide users towards games. Of the developers in the sample, 61% agreed that “[h]ours [p]layed’ is not a measure of quality[,]” and 62% agreed that “[v]isibility on Steam should not be dominated by popularity[.]”⁶³⁶ Some questions go further towards showing a desire among developers to cater games to Steam’s recommendation system, including 68% of developers agreeing that Steam should “[a]llow developers to ‘target’ the discoverability algorithm for their game[,]” and 81% agreeing that Steam should “[c]larify what is needed for various featuring opportunities[.]”⁶³⁷ Most developers want reviews on a game platform, with only 14% stating that Steam should “allow devs to opt-out of reviews altogether[.]”⁶³⁸ However, many disagree with the implementation on Steam, with 71% of developers stating Steam should “separate tech issues from gameplay reviews[.]”⁶³⁹
- (230) Third, developers are also interested in more accessible data from Steam.⁶⁴⁰ In addition to being a general feature that could vary across platforms in the but-for world, giving developers more data would allow them to better understand their customers and more confidently take risks on a game that may be a bigger departure from previous titles.
- (231) In a but-for world with more competitive platforms, publishers who do not agree with the above decisions would be more likely to find an alternative platform that fits their preferences. The absence of variety (and quality) of alternative platforms, engendered by Valve’s PMFN Policy, harms competition.

6.3.2. Reduction in PC desktop game variety

- (232) A video game platform helps users search for and discover games that fit their preferences. Steam’s design affects which games are displayed and advertised to users, and so limits user search effectiveness and game variety. Different platform designs favor different products, characteristics, and consumer preferences, and will not meet everyone’s preferences perfectly. Beyond a general dissatisfaction with Steam’s platform features, restricting platform variety

⁶³⁶ Attachment F-1.

⁶³⁷ Attachment F-1.

⁶³⁸ Attachment F-1.

⁶³⁹ Attachment F-1.

⁶⁴⁰ For example, see Attachment F-1 at ‘Allow easy user rating export / data dump’ and ‘Provide adoption data on various features / hardware’.

ultimately restricts the variety of successful games.⁶⁴¹ This unhappiness should lead to responsive entry of competing platforms, but Valve’s PMFN Policies make successful entry by platforms seeking to address that dissatisfaction effectively impossible.

⁶⁴¹ For additional examples, see:

Valve, Emails Regarding Steam’s Review System, 1/25/2016 (VALVE_ANT_1166796). (An email from a Steam user states: “I’m writing an email to you out of desperation. Recently released game ██████████, a game which I love and enjoy suffers a lot from the abuse of the review system. There is a handful of people that absolutely hate the game and its developers and do all they can to undermine its success. . . . [T]he game is critically acclaimed and liked [b]y many, it has 86% positive reviews and yet people only see negative reviews on Steam, which misrepresents the game and costs the developers and Valve both money as a result. . . . I don’t really feel encouraged to write reviews any more, since the system is so vulnerable to abuse.”)

Valve, Emails Regarding Boston Developer Meeting, 10/5/2018 (VALVE_ANT_0054709–14, at VALVE_ANT_0054711, VALVE_ANT_0054713), available at Alden Kroll, Dep. Tr., 11/16/2023, Exhibit 242. (A Valve email demonstrates how game developers cater their games to fit what they expect Steam’s platform to favor. At a round table discussion with developers, Steam employees noted that “[t]here was also talk about devs trying to ‘solve’ the Steam algorithms. With so many games on the service, many devs feel like there must be best practices for how to stand out, similar to how YouTubers operate.” That same email mentions that “[s]ome devs said that the recommendation-driven [Steam] store was much worse for them. They see fewer games they are interested in[.]”)

Valve, Email Steam Might Have Killed Our Business, 6/6/2018 (VALVE_ANT_2712237–244, at VALVE_ANT_2712243). (A Valve email includes an article describing Valve’s opaque policy (or lack of a policy) regarding explicit content and how Valve makes things difficult for these developers. Two developers “described a ‘chilling effect’ that these unclear policies could have on small developers. They told me that because visual novel developers often make more ‘risky’ games about weighty cultural topics or that embrace sex positivity, this uncertainty could stop them from taking those important risks.” One developer goes on to say that “[a] lot of these [visual novel] developers are marginalized, queer developers and if they’re being disproportionately affected by policies, that has a really unfortunate impact.”)

Valve, Emails Regarding Publisher Promotion, 12/21/2018–7/24/2019 (VALVE_ANT_2637589–621, at VALVE_ANT_2637596). (A publisher expressed grievance about the marketing of its game, telling Valve that “I have to say that we are really disappointed about our publisher sale. We were poorly advertised - we only got a small (and at first wrong scaled) banner, with the same visibility that a ██████████ 20% discount gets for example, and after 36 hours we totally disappeared from the start page as well as the category overviews. We only get a publisher sale only once a year and have also noticed that our competitors are much more promoted.”)

An email from a Steam user discusses shortcomings of Valve’s game maintenance and VAC, Valve’s anti-cheat system: “I recently came back to playing TF2 after two years of hiatus, and while I’ve had a lot of fun relearning everything the game is in a sorry state. Just tonight I spent nearly an hour just trying to find a casual game that wasn’t being completely spammed by bots. There was probably about an average of 3+ bots per team of many different varieties. VAC isn’t working anymore[.] . . . The community is so frustrated with Valve because you’re not even doing the bare minimum to upkeep the game.” See:

Steam Support Website, Valve Anti-Cheat (VAC) System, <https://help.steampowered.com/en/faqs/view/571A-97DA-70E9-FF74> (accessed 11/22/2023). (“VAC stands for Valve Anti-Cheat, an automated system designed to detect cheats installed on users’ computers. If a user connects to a VAC-Secured server from a computer with identifiable cheats installed, the VAC system will ban the user from playing that game on VAC-Secured servers in the future.”)

Valve, Emails Regarding TF2, 1/11/2021 (VALVE_ANT_0058468).

A Valve Blog Post states that Steam wants to maximize happy customers, but they define this as customers buying more games and playing more on the platform. While not a specific platform feature, this goal likely guides their platform design. Other platforms may have alternative objectives that would lead them to make different platform design choices. For example, the GOG website states that they are a “home for building and playing your curated game collection[.] GOG is a digital distribution platform that puts gamers first and respects their need to own games.” The itch.io website states that they are “an open marketplace for independent digital creators with a focus on independent video games. It’s a platform that enables anyone to sell the content they’ve created. As a seller you’re in charge of how it’s done: you set the price, you run sales, and you design your pages.” See:

- (233) For example, a publisher emailed Valve to express frustration about its games not getting exposure and Valve’s irresponsiveness, stating that “[t]he reason I contact you is because I have problems getting in touch with business developers at Valve. I know they are super busy, but who doesn’t take a shot, never scores.”⁶⁴² The publisher went on to say that the sales of its game “have been really disappointing[.] . . . *Often we hear that our game is a ‘hidden gem’, but as you can imagine, we don’t want to be hidden.*”⁶⁴³ That disappointed publisher has no alternative but to stay on Steam. But for Valve’s policies, competition would lead to such options.
- (234) In a series of emails, Valve employees are aware of the impact they have on what consumers see and ultimately purchase, noting that developers are aware of the algorithm used to determine a game’s visibility: [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]⁶⁴⁴ Further, one employee recognizes that review bombing through Steam’s review feature [REDACTED]
[REDACTED]
[REDACTED]⁶⁴⁵
- (235) In an email regarding the 2020 GDC, Valve recognizes publisher complaints, noting that triple-A publishers cannot predict marketing and Steam “won’t let [them] email customers[;]” indie developers think “Steam doesn’t care about us, [and gives] [n]o exposure to small guys, [and] [w]e’re at the whim of [Steam’s] ‘algorithm’[;]” and that publishers think that “[Steam] Store is full of shit games, which reduces exposure for good game[.]”⁶⁴⁶ Additional publisher complaints include: “Valve is detached, no human touch, try to solve everything with algorithms[;]” “no communication around changes that affect my business[;]” “Steam is too

Valve, Steam Store Updates Helping Customers Find Games, undated (VALVE_ANT_0054520–24, at VALVE_ANT_0054520).

GOG Website, About GOG, https://www.gog.com/en/about_gog (accessed 11/15/2023).

Itch.io Website, About Itch.io, <https://itch.io/docs/general/about> (accessed 6/14/2023).

⁶⁴² Valve, Emails Regarding Game Exposure, 7/22/2015–8/3/2015 (VALVE_ANT_2681402–411, at VALVE_ANT_2681410).

⁶⁴³ Valve, Emails Regarding Game Exposure, 7/22/2015–8/3/2015 (VALVE_ANT_2681402–411, at VALVE_ANT_2681410). (Emphasis added.)

⁶⁴⁴ Valve, Emails Regarding Review and Library, 12/10/2018–12/12/2018 (VALVE_ANT_0052615–622, at VALVE_ANT_0052616).

⁶⁴⁵ Valve, Emails Regarding Review and Library, 12/10/2018–12/12/2018 (VALVE_ANT_0052615–622, at VALVE_ANT_0052618).

⁶⁴⁶ Valve, Emails Regarding GDC, 1/31/2020–3/3/2020 (VALVE_ANT_0053212–216, at VALVE_ANT_0053213–214).

hands off, there’s no [game] quality bar[;]” and “Steam [user] community is toxic and you do nothing to stop it[.]”⁶⁴⁷

- (236) In a but-for world with more competitive platform alternatives, consumers would be able to choose from a variety of platforms, helping them to efficiently search for the games they want. Meanwhile, different types of publishers could expand their sales on other platforms that better address their needs and those of their user base.

6.3.3. Lack of innovation on Steam

- (237) Valve’s incentives to innovate and improve Steam’s features are diminished by its monopoly power, with Valve itself [REDACTED]
[REDACTED]⁶⁴⁸ Valve’s failure to innovate and create value for customers has not hurt Steam competitively, because Steam has eliminated all meaningful options for gamers and developers.

- (238) Relatedly, in a discussion regarding Valve’s value proposition for its 30% commission, a Valve employee noted [REDACTED], stating:⁶⁴⁹

[REDACTED]

- (239) Similarly, Valve also has acknowledged Steam’s lack of innovation from a publisher/developer perspective. In an internal email regarding publisher feedback, a Valve employee wrote that “I’ve seen some people mention (either directly to me, or to the internet in general) two points that I thought were interesting enough to repeat[;]” one of those points is that “Valve doesn’t

⁶⁴⁷ Valve, Emails Regarding GDC, 1/31/2020–3/3/2020 (VALVE_ANT_0053212–216, at VALVE_ANT_0053213–214).

⁶⁴⁸ Valve, Emails Regarding Discord and Steam, 8/9/2018 (VALVE_ANT_0406135–39, at VALVE_ANT_0406135), available at Chris Boyd, Dep. Tr., 11/17//2023, Exhibit 311.

See also:

Chris Boyd, Dep. Tr., 11/17//2023, at 113:10–19. (“Q. So you were saying in this email that if every team cut its resources by 30 percent and they went to Steam, there’s a lot to build/freshen up/maintain/et cetera, that all those people could work on and be busy with, correct? A. My reading of this email is, yeah, if -- I was interested in people coming to work on Steam and I thought that -- that there was room for people to help build, freshen up and maintain, et cetera, different parts of Steam.”)

⁶⁴⁹ Valve, Emails Regarding Valve’s Value Proposition, 8/10/2018 (VALVE_ANT_0053662–63, VALVE_ANT_0053662).

do enough to justify the 30% commission – [there is] no promotion, no discovery, no main page exposure, no sales drivers other than Workshop merely existing as a feature.”⁶⁵⁰ Another employee also acknowledged this, stating that “I understand that some game partners [(publishers)] feel like we aren’t providing significant value outside of distribution[.]”⁶⁵¹ In another related discussion regarding publishers on Steam, Valve acknowledged the [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]⁶⁵²

- (240) However, Valve’s PMFN Policy protects entry from potential competitors, as there is a reliance on Steam’s platform of users and developers, and then the inability to compete on price or content on competing platforms. As such, Valve knows that it does not need to invest or innovate on Steam to compete for additional users and developers. The lack of competition and cycle of network effects, protected by the PMFN Policy, keep users and developers on the platform. In a but-for world with legitimate competition, Steam would be forced to innovate and adapt to consumer preferences in order to compete on the merits with other platforms, which would ultimately lead to better feature variety and choice for end users and developers.

⁶⁵⁰ Valve, Emails Regarding Developer feedback, 4/27/2015–4/28/2015 (VALVE_ANT_0112242–44, VALVE_ANT_0112244).

⁶⁵¹ Valve, Emails Regarding Developer feedback, 4/27/2015–4/28/2015 (VALVE_ANT_0112242–44, VALVE_ANT_0112243).

⁶⁵² Valve, Emails Regarding Publishers on Steam, 5/24/2017–5/25/2017 (VALVE_ANT_0052713–15, at VALVE_ANT_0052713).

7. Economic Assessment of Class-Wide Impact

7.1. Overview

- (241) I have been asked to analyze whether there are common methodologies available that show all (or nearly all) putative class members were injured by Valve's enforcement of price and content parity during the class period. The answer is yes.
- (242) All major platforms that digitally distribute third-party PC games, including Valve, impose a standardized pricing structure on all publishers, typically a fixed commission rate.⁶⁵³ Valve sets its pricing structure (most recently a tiered commission rate) in its SDA Agreement, which applies to all publishers on Steam.⁶⁵⁴ Given Valve's imposition of a standard pricing structure for publishers, if the PMFN policy is eliminated, the default commission rate would fall and that would benefit each publisher. Each publisher would only pay the new, lower, default

⁶⁵³ For example, since November 2018, Steam has a default tiered commission structure. See:

Steam, "New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement," 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

Prior to this, Steam charged the majority of publishers 30%. See:

Scott Lynch, Dep. Tr., 10/12/2023, at 89:15–90:2, 141:15–18. ("Q. Did there come a time that Valve stopped offering ██████████ and instead switched to 70/30s? A. I don't think there was this stop. I mean, eventually, deals started being 70/30 predominantly. Q. When did that start to occur? When did they become predominantly 70/30? A. That's going way back. It could have been 2010 maybe, sometime in that timeframe. Q. And from that point forward, the deals were predominantly 70/30? A. I think from that point going forward, a lot of deals were 70/30, yeah."; "Q. And the predominant revenue share for Steam is 30 percent; right? A. During 2018, yeah, the majority would be 30 percent.")

As another example, Epic charges a fixed commission rate of 12%. See:

Epic Games, "The Epic Games Store is Now Live," 12/6/2018, <https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live>. ("Our goal is to bring you great games, and to give game developers a better deal: they receive 88% of the money you spend, versus only 70% elsewhere. This helps developers succeed and make more of the games you love.")

Similar, Microsoft charges a fixed commission rate of 12%. See:

The Verge, "Microsoft Shakes Up PC Gaming by Reducing Windows Store Cut to Just 12 Percent," 4/29/2021, <https://www.theverge.com/2021/4/29/22409285/microsoft-store-cut-windows-pc-games-12-percent>.

⁶⁵⁴ Steam, "New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement," 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

For specific examples of standard SDAs, see:

Valve, SDA with ██████████, 1/1/2015 (VALVE_ANT_0020270–86, at VALVE_ANT_0020275). (See Section 6.1 of the Agreement.)

Valve, SDA with ██████████, 6/4/2015 (VALVE_ANT_0023003–21, at VALVE_ANT_0023010). (See Section 6.1 of the Agreement.)

Note that some publishers have ██████████. However, these publishers too would benefit from a lower default rate. See Section 7.5.1.

commission rate. Thus, all, or virtually all, class members were injured provided that an economic analysis shows Valve’s commission rates would decrease in a world free of Valve’s PMFN Policy.

(243) This question of whether there is class-wide impact can be addressed in a variety of ways. In this case, I used three distinct economic approaches to consider whether common class-wide evidence can show class-wide impact. Each of these three approaches establish that common, class-wide evidence can be used to show class-wide impact.

- Approach 1: I construct and apply a model based on economic theory derived from the relevant, peer-reviewed economic literature and applied to the facts and circumstances of this market. I use this model to show that Valve’s parity enforcement harms all or virtually all members of the putative class. Specifically, I adapt the work of Andre Boik and Kenneth Corts to construct a Platform Competition Model, which shows that parity enforcement by an incumbent platform like Valve leads to higher platform fees, deters entry by rivals, and increases consumer prices.
- Approach 2: I apply a “yardstick approach” to evaluate comparable markets and explain how platform fees in those other markets compare to Steam’s commission rate. Comparing prices between Steam and markets comparable across many characteristics allows for the consideration of prices but for Steam’s alleged anticompetitive conduct.
- Approach 3: I look to empirical evidence from the PC gaming market to determine the impact of limited (and ultimately transitory) outbreaks of competition. Specifically, I look to the entry of Epic’s EGS, which was a well-funded attempt at entry by one of the leading game publishers in the world.

(244) Any of these approaches, standing alone, could be used to show impact or injury to all putative class members. Because each approach leads to the same conclusion, they provide compelling evidence that Valve’s parity enforcement has a negative impact on all or virtually all putative class members.

7.2. Platform Competition Model approach

(245) To assess the impact and competitive effects of PMFN-type provisions and behaviors, I draw on a model developed by Andre Boik and Kenneth Corts to assess the impact of PMFNs (the “Boik-Corts model”). The Boik-Corts model demonstrates that “PMFN clauses typically raise platform fees and retail prices and curtail entry or skew positioning decisions by potential

entrants pursuing low-end business models.”⁶⁵⁵ I apply the relevant principles from Boik and Corts to construct a model that considers and incorporates the facts and circumstances of this case.

- (246) Generally, this model closely matches the facts of this case, including the characteristics of Steam and the relevant market. First, the Boik-Corts model considers two platforms, I , where $i = 1, 2$. In the extended model that I build on, there is an established “incumbent” firm with high costs and high demand that charges a high fee (*e.g.*, Steam), and a lower cost, low demand competitor who wants to charge a lower fee (*e.g.*, existing, past, or potential entrant competitors like GOG, EGS, EA App, and Ubisoft Connect). Like Steam and other participants in the relevant market, the platforms set a one-sided, per-transaction fee (f_i) charged to the seller side of the market (game publishers). Boik and Corts call these fees “transaction fees.” In the discussion that follows, I refer to these fees as both transaction fees and platform fees interchangeably. These transaction/platform fees are equivalent to the commissions charged to publishers for purchases made on the Steam platform. As with Steam and others in the relevant market, the platforms facilitate transactions between sellers and buyers. In the same way that game publishers on Steam operate, the sellers in the Boik-Corts model set their own price on one or both platforms, denoted p_i , where I denotes the platform on which the price is listed. To avoid confusion with platform fees, I refer to these prices as “consumer prices.” The platforms determine if they implement a PMFN policy, which allows for comparisons of outcomes (like consumer prices, platform fees, and entry) with and without PMFNs in place.
- (247) In considering platform fees and consumer prices, Boik and Corts consider various iterations of their model. To begin, in their simplest model, Boik and Corts assume a symmetric model of demand.⁶⁵⁶ While not being directly aligned with the facts of the case, this simplification leads to more concise algebraic results supporting a more generalized model. The general conclusions of this simplified model are that PMFNs increase platform fees and consumer prices.⁶⁵⁷ In my analysis below, I reach the same conclusion.

⁶⁵⁵ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 105.

⁶⁵⁶ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 111.

⁶⁵⁷ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 114. (In particular, they say that “Equilibrium fees and prices are higher when both platforms have PMFN agreements.” In my analysis, I find that the Steams PMFN increases fees in the asymmetric model.)

- (248) I build on their expanded model, which allows the platforms to face different demand functions (the “asymmetric Boik-Corts model”), as is the case here. The asymmetric Boik-Corts model closely matches the facts of the case. In the discussion that follows, I explain why the Boik-Corts model is applicable to the case and show that PMFNs in general increase platform fees. Next, I show that Steam’s PMFN reduces entry. Finally, I calibrate the model to match the facts of the case and show that developer’s economic profits would be [REDACTED] higher without the PMFN.
- (249) My Platform Competition Model is calibrated to real-world market data. In the real world, Valve has a PMFN Policy that it has enforced for many years. Accordingly, real-world data necessarily reflects Valve’s longstanding market power. The results of the model, therefore, are conditional on these market facts. Nonetheless, the model reflects a decrease in commission rate, applicable to all, or virtually all, class members,
- (250) Additionally, my Platform Competition Model demonstrates the interim impact on prices and output when a single competitor enters the market. In my damages analysis, I use the LandesPosner model to calculate the butfor commission rate in a fully competitive market, with more than two platforms competing. That model likewise confirms that all or virtually all class members are impacted by Valve’s PMFN Policy.

7.2.1. Platform Competition Model

- (251) In the asymmetric Boik-Corts model, differing demand functions imply that goods with the same consumer price on different platforms will sell different quantities. Costs may also vary between platforms at a given output level, and it is assumed that the platform with the higher demand incurs higher costs.⁶⁵⁸ For example, at a given consumer price, the entering platform would have lower demand but also have lower per-unit costs, implying that it can offer lower fees, making it a viable competitive alternative despite a lower demand.⁶⁵⁹

⁶⁵⁸ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123. (“We allow $c_2 < c_1$, where firm 1 refers to the incumbent. We also permit the possibility that the entrant has a lower-value offering, which results in a reduction in demand of $x > 0$ for any given prices: $\hat{q}_1(p) = a - bp_1 + dp_2$ and $\hat{q}_2(p) = a - x - bp_2 + dp_1$.”)

⁶⁵⁹ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123. (“Note that lower x need not reflect an inferior platform in a general sense; it is a platform that faces lower demand at given prices, but this may be accompanied by lower variable or fixed costs that make the entrant quite a viable competitor and a potential contributor to total welfare. Similarly, a lower cost need not make a firm a superior creator of value if it is accompanied by a demand disadvantage.”)

- (252) More formally, like the asymmetric Boik-Corts, my model includes a seller (*i.e.*, the game publisher) who sets its own consumer prices,⁶⁶⁰ p_i , on each of two platforms $i = 1, 2$.⁶⁶¹ Consumer demand across platforms 1 and 2 is described by the following equations:⁶⁶²

$$q_1(\mathbf{P}) = a - bp_1 + dp_2$$

$$q_2(\mathbf{P}) = a - x - bp_2 + dp_1$$

- (253) These demand curves allow for the publisher’s price on one platform to impact consumer demand on the other platform, without assuming that buyers would choose only to purchase from the cheapest option.⁶⁶³ The x term allows for one platform to have a “lower-value offering, which results in a reduction in demand of $x > 0$ for any given [consumer] prices[.]”⁶⁶⁴ Lower-value, in this case, does not imply that a platform is inferior; rather, lower-value refers to a “platform that faces lower demand at given [consumer] prices, but this may be accompanied by lower variable or fixed costs that make the entrant quite a viable competitor and a potential contributor to total welfare.”⁶⁶⁵ This asymmetric demand assumption in my model better aligns with consumer demand in the real world, in which consumer quantity demanded may vary across platforms even if a game is listed at the same consumer price.
- (254) In this asymmetric demand model, a single PMFN can be binding (*i.e.*, consumer prices on the PMFN-bearing platform sets a floor on consumer prices on other platforms). This is the case when the established, high-fee platform (*e.g.*, Steam) implements a PMFN—prices on other

⁶⁶⁰ In this model, there is only one good on each platform. That is, the seller lists a single game on each platform. This can be seen from the fact that there is a single demand function for each platform. Boik and Corts discuss this, saying the following “Finally, our main model features a single seller doing business through multiple platforms. In our examples, typically many sellers sell through a similar set of multiple platforms. We believe that our results apply qualitatively to this setting as well, though of course the modeling of multiproduct, multiplatform demand would make formal modeling of this case much more difficult.” See:

Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 117.

⁶⁶¹ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 110.

⁶⁶² Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123.

⁶⁶³ In particular, demand for games from platform i decreases by b when the price on i increases, and demand on i increases by d when the price on the alternative platform increases.

⁶⁶⁴ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123.

⁶⁶⁵ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123.

platforms are raised to those seen on the high-fee, PMFN-holding platform. Intuitively, competing platforms would choose to set publisher fees below the level set by Steam to encourage publishers to price lower on their platform to attract users; however, publishers are restricted by Steam's PMFN. If competing platforms implemented a PMFN as well, that would prevent publishers from charging a lower consumer price on Steam, but because Steam is the high transaction fee option, this is a non-binding constraint on publishers. Consequently, whether the competing lower transaction fee platform (or platforms) employs a PMFN does not impact the consumer price that a publisher chooses on that platform. Thus, in the asymmetric model, the existence of a single PMFN set by the established platform forces all consumer prices to the higher prices set by the high transaction fee platform.⁶⁶⁶ This is true so long as demand is "asymmetric enough that the fee-setting equilibrium behaves as if there are two PMFN agreements."⁶⁶⁷ It is clear that demand is asymmetric in the real world because when a PMFN is in place and binding, the consumer prices will be equal across platforms. That is $p_1^2 = p_2^2$ where the superscript denotes that there are two PMFNs in place (or one binding PMFN). I can subtract the two demand equations above to show that $x = q_1^2(P) - q_2^2(P)$.⁶⁶⁸ Since Steam sells larger quantities at the same price, this indicates x is positive.⁶⁶⁹

⁶⁶⁶ Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 123.

⁶⁶⁷ Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 123.

⁶⁶⁸ $q_1^2(P) - q_2^2(P) = x + b(p_2^2 - p_1^2) + d(p_2^2 - p_1^2)$
 $\Rightarrow q_1^2(P) - q_2^2(P) = x$

⁶⁶⁹ Note that Steam charging a higher fee than competitors with the PMFN in place also indicates asymmetric demand. While it may seem that firms could simply leave the high fee platform (Steam), Boik and Corts address this concern in their paper. Saying "Our main model also assumes that the seller sells through both platforms, even when it is charged (or can anticipate being charged) a very high fee because of PMFN agreements. It is natural to expect that if PMFN agreements raise fees sufficiently, the seller may wish to drop one platform and sell instead through a single platform, which would render the PMFN agreement moot and therefore potentially reduce fees (though it now pays fees to a monopolist platform, so this is by no means certain). We show in Appendix B that even with PMFN agreements in place, there exist parameter values for which the 2PMFN equilibrium is preferred by the seller over dealing with a monopoly platform, which implies that the seller would in those cases not drop a platform even though it anticipated high 2PMFN fees." See:

Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 117.

PMFNs increase fees by decreasing elasticity of demand

- (255) The asymmetric demand functions allow the derivation of “implied demand as a function of transaction fees[.]”⁶⁷⁰ It is referred to as an “implied demand function” because it models quantity demanded as a function of platform fees rather than the consumer price of the good.⁶⁷¹ The platform fees on each platform i are, as before, denoted as f_i . The seller’s constant marginal and average production cost is denoted c_s .⁶⁷² How a seller sets their consumer prices, and by extension how a platform’s fees impact demand on its platform, depends on whether a PMFN is in place.⁶⁷³ Below are the implied demand functions for the established platform (e.g., Steam), denoted as $q_1^{0,2}(f)$ where 0 and 2 denote whether or not there are PMFNs in place.⁶⁷⁴

$$q_1^0(f) = \frac{1}{2}[a - b(c_s + f_1) + d(c_s + f_2)]$$

$$q_1^2(f) = \frac{1}{4}[2a + 2dc_s + d(f_1 + f_2) - b(2c_s + f_1 + f_2) + x]$$

- (256) These implied demand functions show that removing the PMFN *increases* the responsiveness of the established platform’s quantity sold to platform fee changes. That is, the change (mathematical derivative) in quantity with respect to the established platform’s fee, f_1 , becomes *more negative* without a PMFN, meaning that quantity demanded will decrease *more* with an increase in platform fees. Below, I show the resulting derivatives with respect to the established platform’s fee for each implied demand curve:⁶⁷⁵

⁶⁷⁰ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 112, 133.

⁶⁷¹ This is the relevant demand from the perspective of the platform. The platform sets fees, and those fees determine the quantity of sales on their platform.

Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 111.

⁶⁷² Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 110.

⁶⁷³ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 111–112.

⁶⁷⁴ As discussed above, whether there are one or two PMFNs the results are equivalent. For clarity, I keep the notation from the Boik and Corts paper and label the outcome with any PMFNs with a 2. See:

Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 133.

⁶⁷⁵ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 114. (“[I]n essence, implied demand is made more inelastic by the adoption of PMFN agreements since it limits the seller’s incentive to pass through fee increases.”)

$$\frac{\partial q_1^0(f)}{\partial f_1} = -\frac{1}{2}b$$

$$\frac{\partial q_1^2(f)}{\partial f_1} = -\frac{1}{4}(b-d)$$

- (257) Using the definition of elasticity of demand (the relationship between a change in price and the resulting change in quantity demanded) and the above equations, I derive the established platform's elasticity of implied demand with and without a PMFN:⁶⁷⁶

$$\epsilon_1^0(f) = \frac{b f_1^0}{2 q_1^0}$$

$$\epsilon_1^2(f) = \frac{b-d f_1^2}{4 q_1^2}$$

- (258) These equations show that a PMFN *reduces* the established platform's elasticity of implied demand (*i.e.*, demand is more *inelastic* with the PMFN).⁶⁷⁷ This can be seen from the following.

$$\epsilon_1^0(f) = \frac{b f_i}{2 q_i} > \frac{b-d f_i}{4 q_i} = \epsilon_1^2(f)$$

$$\Leftrightarrow \frac{b}{b-d} > \frac{2}{4}$$

- (259) Per Boik-Corts, since $b > d > 0$, the following inequality holds:

$$\frac{b}{b-d} > 1 > \frac{2}{4}$$

⁶⁷⁶ Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 114. ("Recall that the responsiveness of implied demand to own fee is smaller in absolute value (less negative) under the 2PMFN regime than under the 0PMFN regime ($\partial q_i^0(f)/\partial f_i < \partial q_i^2(f)/\partial f_i < 0$): in essence, implied demand is made more inelastic by the adoption of PMFN agreements since it limits the seller's incentive to pass through fee increases.")

Also note that $b, d > 0$ and $b > d$. See:

Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 111.

⁶⁷⁷ The elasticity with a PMFN, $\epsilon_1^2(f)$, has a larger denominator ($4 > 2$) and a smaller numerator. I know $b-d < b$ because $b > d > 0$. See:

Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 111.

(260) Thereby proving:

$$\epsilon_1^0(f) > \epsilon_1^2(f).$$

(261) As Boik and Corts point out, “[t]he fundamental mechanism at work in raising [platform] fees and [consumer] prices in our model is that PMFN agreements reduce the elasticity of implied demand for a platform when considering its fee[.]”⁶⁷⁸ In other words, with a PMFN in place, the high-fee established platform can charge a higher fee and, even if that fee increase leads to higher consumer prices, consumers will not have the option to switch to a platform with a lower consumer price (since it is not allowed by the PMFN). Since the same fee increase will result in fewer consumers leaving the platform (since consumers cannot get lower prices elsewhere), the established platform will implement higher transaction fees with the PMFN in place.⁶⁷⁹ Per Boik and Corts, “the basic intuition is that a firm seeking to compete on the basis of low price (typically, a demand-disadvantaged or marginal-cost-advantaged firm) has a hard time competing when the possibility of undercutting the higher-value, or higher-cost incumbent is precluded.”⁶⁸⁰

Steam’s PMFN deters entry

(262) As a result of inflated platform fees and potentially consumer prices (depending on pass-through), PMFNs in general deter entry of platforms with a “sufficiently large difference in position.”⁶⁸¹ As I showed above, the level of differentiation when a binding PMFN is in place is measured by $x = q_1^2(P) - q_2^2(P)$.⁶⁸² Steam’s large market share relative to its competitors demonstrates that x is large in this case.

(263) The impact of a PMFN on a platform’s decision to enter the market depends on the difference between a potential platform entrant’s demand and preferred fee and the incumbent platform’s

⁶⁷⁸ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 118.

⁶⁷⁹ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 114.

⁶⁸⁰ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123.

⁶⁸¹ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 125–126. (“As a result, whether the incumbent’s PMFN policy encourages or discourages entry depends on the exogenous demand disadvantage x of the entrant and its associated fixed cost $k_2(x)$.”)

⁶⁸² $q_1^2(P) - q_2^2(P) = x + b(p_2^2 - p_1^2) + d(p_2^2 - p_1^2)$
 $\Rightarrow q_1^2(P) - q_2^2(P) = x$

demand and fee. A PMFN raises platform fees, so other platforms that want to charge high fees may benefit from the PMFN (as they would benefit from the same lack of competition on fees as would the established platform). However, in the more typical case, if an entrant expects to sell less at the same consumer price (as would be the case here, given Steam’s dominant market position), a PMFN discourages entry.⁶⁸³ The PMFN prevents potential entrants from competing on the consumer price of games (that is, allowing sellers to list products at a lower price and maintain profit margins by offering sellers lower fees), so these low-fee platform entrants cannot effectively compete with the high-fee (high-cost) incumbent platform.

- (264) In the context of the actual PC game platform market, entrants competing with Steam generally charge lower fees than Steam, even after entering and in the presence of the PMFN.⁶⁸⁴ Hence, Steam’s competitors are of the “low-fee” type, and disadvantaged by the PMFN.
- (265) This effect is illustrated in Figure 4 below. The vertical axis is the fixed cost of entering the market, and the horizontal axis is the demand disadvantage faced by the potential entrant platform relative to the incumbent platform (Steam).⁶⁸⁵ The two lines show the variable profits for each degree of differentiation x such that a platform will enter if $\pi_2^{j*}(x) - k_2(x) \geq 0$ where $j = 0, 2$ indicates whether PMFN policies are adopted.⁶⁸⁶ The negative slope of the profit functions indicate that a potential entrant’s variable profit $\pi_2^{j*}(x)$ decreases with the platform’s demand disadvantage. The steeper line in the presence of the PMFN reflects that the presence of the PMFN causes the potential entrant’s variable profits to decline more quickly as the demand disadvantage grows.⁶⁸⁷

⁶⁸³ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 124–128.

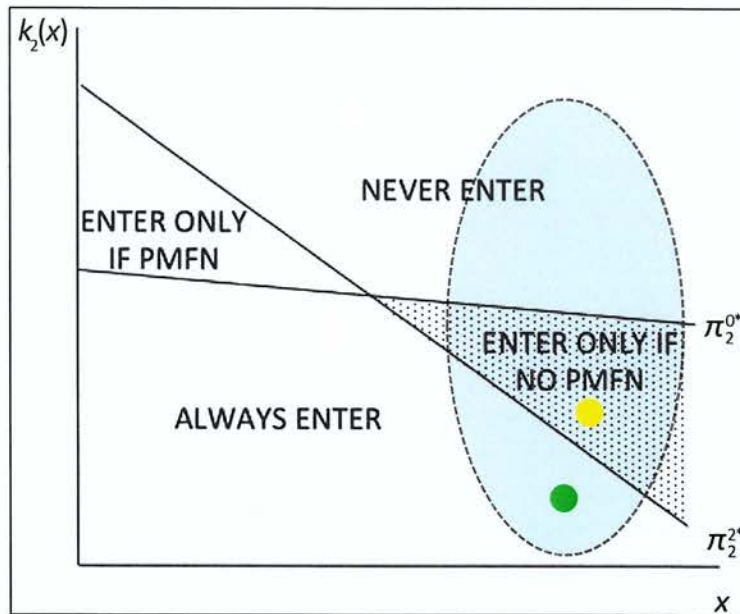
⁶⁸⁴ See Section 6.1. I am unaware of any major platforms entering with fees greater than Steam’s.

⁶⁸⁵ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 125.

⁶⁸⁶ Recall that in the asymmetric model two PMFNs is equivalent to one binding PMFN. While this case involves a single binding PMFN, I follow the convention of the paper and refer to the PMFN scenario with a 2.

Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 124.

⁶⁸⁷ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 125.

Figure 4: PMFN Entry Graph⁶⁸⁸

- (266) In the PC game distribution market, competing platforms fall on the right side of the graph in the blue shaded oval (with a large x value), meaning their profits fall as their demand disadvantage grows. There are three types of platforms in the oval. The first type of platform, characterized by large fixed costs and a large demand disadvantage relative to the established platform, never enters the market. The second type of platform always enters the market, despite the presence of the PMFN, but to limited success (see Section 4.1 and Section 6.2). In Figure 4, the green point illustrates where a platform of this type may fall on the graph. These competing platforms can afford to enter and do so despite the PMFN but would still receive higher profits in the absence of the PMFN since their variable profits are higher without a PMFN, *i.e.*, the $\pi_2^{0*}(x)$ is above the $\pi_2^{2*}(x)$ line for this platform at this level of x .
- (267) The third type of platform would enter absent the PMFN but does not enter in the presence of the PMFN. In Figure 4, the yellow point illustrates where a platform of this type may fall on the graph. These platforms *would* enter and compete with Steam (driving down fees) if the PMFN were not in place but do not enter because of the PMFN.
- (268) Note that while the effect of the PMFN on overall *entry* depends on the entrant platform's type (where they fall on the graph), the PMFN increases fees across all of the possible scenarios on

⁶⁸⁸ Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 125.

the graph. This is because a PMFN decreases the established platform’s elasticity of demand which increases the established platform’s prices, as explained above. If there were “similar” platforms on the left-hand side of the graph, the PMFN would only encourage them to enter *because* the PMFN increases platform fees. The fact that in the real world the PMFN reduces overall entry is an additional harm to game publishers beyond the increase in fees and the general conclusion that the PMFN reduces platform variety.

- (269) Other economic literature on PMFNs supports these insights.⁶⁸⁹ Jonathan Baker and Fiona Scott Morton explain how entrants to a market typically benefit from a low-price strategy and how that strategy is disrupted by a traditional MFN:⁶⁹⁰

An MFN can raise the costs of current or potential competitors by negotiating lower prices from suppliers of critical inputs. For example, suppose an entrant wishes to gain customers by charging a lower price (perhaps because it has no established brand name or installed base). It can profitably sell at a low price by undertaking selective contracting with suppliers [(here, publishers)] willing to offer a discount in exchange for more volume or other favorable terms. If those suppliers also supply the incumbent [(here, Steam)], however, an MFN imposed by the incumbent would require the supplier to charge the same price to the entrant. This parity undermines the entrant’s business model by preventing it from making an attractive offer to customers. The symmetry that MFNs impose on the marketplace thus can prevent new competition that would lower prices.

- (270) While this narrative treats platform characteristics as fixed, it is likely that platforms have some control over their type. Platforms can choose to add features that could increase demand at a given price, allowing the platform to compete more effectively at a high-fee equilibrium. To the extent that platforms have any control over the nature of their operation (including pricing and fee structure), a PMFN imposed by an entrenched platform will push any entrants into the market to choose a higher-cost, higher-fee version of their platform, minimizing cross-platform differentiation.⁶⁹¹ This results in a reduction in platform variety, impacting both publishers and users negatively. See discussion in Section 6.3.

⁶⁸⁹ Other work corroborates the harmful impact of PMFNs on competition. Professors Baker and Scott Morton find that “platform MFNs generally harm competition, except in narrow circumstances in which freeriding concerns are especially strong.” See Section 7.5.3 for further discussion regarding freeriding. See also:

Baker, Jonathan B. and Fiona Scott Morton (2018), “Antitrust Enforcement Against Platform MFNs,” *Yale Law Journal* 127(7): 2176–2202, at 2178.

⁶⁹⁰ Baker, Jonathan B. and Fiona Scott Morton (2018), “Antitrust Enforcement Against Platform MFNs,” *Yale Law Journal* 127(7): 2176–2202, at 2180.

⁶⁹¹ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134 at 126–128.

(271) As I discuss in Section 6.3 a reduction in platform variety in the video game distribution market in turn reduces the variety of PC games. A PMFN pushes platforms towards a high-fee model. This, in turn, will push up retail prices as developers pass through part of the (relatively higher) fee to consumers. Developers, then, will only produce game types that will do well on a high-fee platform model. Games that might be developed for sale on low-fee platforms might not generate enough profits to surpass development costs on high-fee platforms. Such games may systematically differ from high margin games in type of content they offer (for example the genre of the game or amount and quality of content included).

7.2.2. Numeric analysis

(272) To further illustrate the impact of Steam’s PMFN on developers, I calibrate the model outlined above to case-specific parameters. The model as presented above uses demand and cost parameters $a, b, d, x, c_1, c_2, c_3$ to determine prices, fees, and quantities with and without a PMFN on both platforms.⁶⁹² I determine a set of model parameters $a, b, d, x, c_1, c_2, c_3$ that correspond to the case specific values for $p_1^2, p_2^2, q_1^2, q_2^2, f_1^2, f_2^2, c_1, c_2$. Using this set of model parameters, I can then model the corresponding fees, prices, and quantities absent the PMFN; that is, the impact of eliminating the PMFN.⁶⁹³ My model considers a competing platform to Steam; I illustratively use EGS. I find that without the PMFN, the seller’s economic profits would increase from \$0 to approximately [REDACTED]. My results are below.

(273) I use case-specific parameters to calibrate the model. First, the price of a game in the presence of a PMFN, p_1^2, p_2^2 , is normalized to \$60. Steam’s quantity and EGS’s quantity, q_1^2, q_2^2 , are determined from Steam’s market share of [REDACTED] over the period of 2017–2021 and the total market revenue of [REDACTED] over the period 2017–2021, giving quantities for Steam (q_1^2) and EGS (q_2^2) of approximately [REDACTED] units and approximately [REDACTED] units, respectively, using a normalized price of \$60 per game.⁶⁹⁴ The commission rate for Steam with the PMFN in place, f_1^2 , is set to [REDACTED] (see Section 8.3),⁶⁹⁵ I use Epic’s and Microsoft’s 12%

⁶⁹² For the full list of equations identified by the asymmetric Boik-Corts model, see:

Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 133–134.

⁶⁹³ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 133–134.

⁶⁹⁴ See: Attachment E-1 and “09b_corner_Id.R”.

⁶⁹⁵ Valve Transaction Data, 1/28/2017–12/31/2022. See: “05_Damages.R.”

commission rate for f_2^2 ((see Section 6.1). I set c_1 to [REDACTED] (see Section 8.3) and c_2 to [REDACTED] of transaction value (see Section 4.2.4).

(274) I use the R package `nloptr`, which solves constrained optimization problems, to find model parameters $a, b, d, x, c_1, c_2, c_s$ that minimize the sum of the squared difference between the real-world values I outline above, and the corresponding values the model produced by the inputs. For a given set of model inputs, the values for the outputs $p_1^2, p_2^2, q_1^2, q_2^2, f_1^2, f_2^2, c_1, c_2$ are determined via a two-step process described in appendix A.1. The constraints from the model are imposed on the solution, that is that $b > d$ and $c_1 > c_2$, along with constraints that quantities, fees, and platform profits with and without the PMFN all must be positive.⁶⁹⁶ The full analysis is available in available in the provided R code.⁶⁹⁷ The result of this process is shown in Table 3 below, along with Figure 5. Some of the figures below may not match the case-specific parameters exactly as a result of the model calibration.

⁶⁹⁶ These constraints ensure both platforms want to be in the market with the PMFN in place which ensures the example matches reality.

⁶⁹⁷ See: “09b_corner_Id.R” and “10_BC_tables.R”

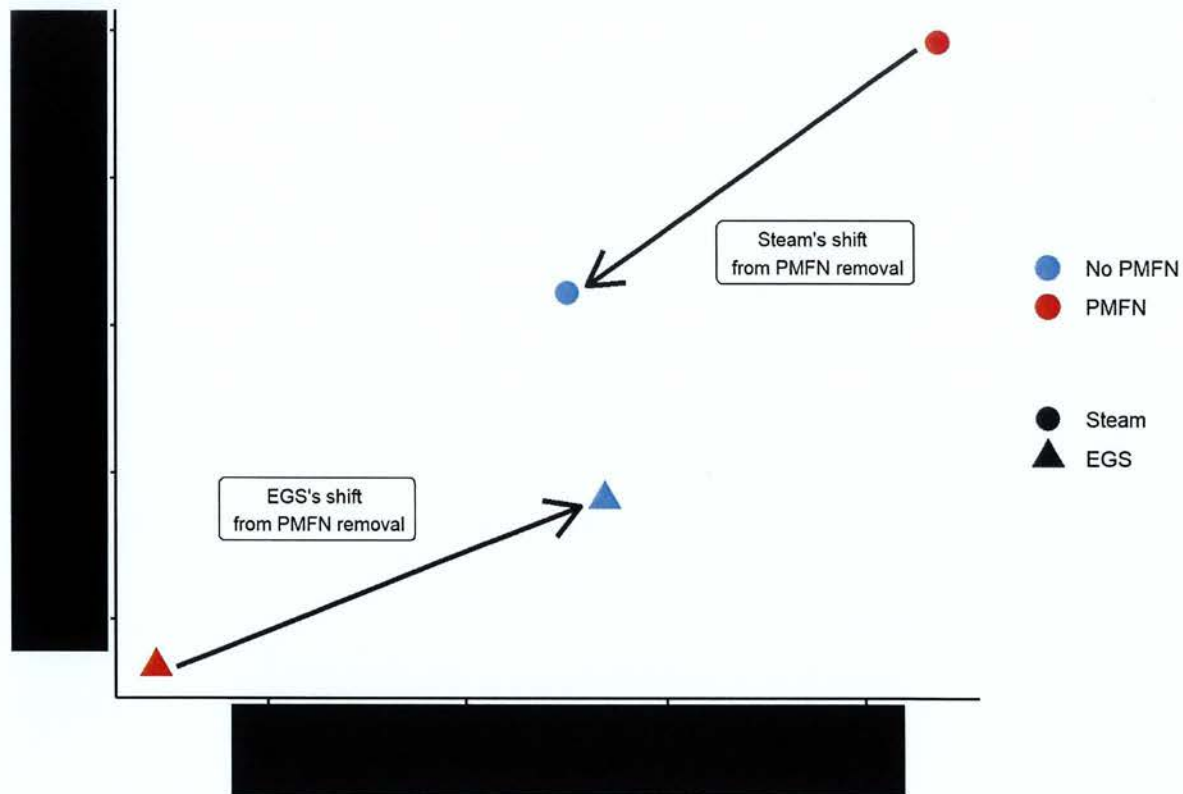
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Table 3: Platform Competition Model Calibrated Results

Metric	With PMFN		Without PMFN	
	Steam	EGS	Steam	EGS
Fee	████	████	████	████
Fee %	████	████	████	████
Price	████	████	████	████
Quantity (units, millions)	████	████	████	████
Share	████	████	████	████
Platform economic profits (millions)	████	████	████	████
Seller economic profits (millions)	████	████	████	████
Seller profits per unit	████	████	████	████
Weighted price across all games		██		██
Weighted fee across all games		██		██
Weighted commission rate across all games		██		██

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Figure 5: Transaction Fee and Quantity Shifts



- (275) Absent the PMFN, many users switch from Steam to EGS, with Steam's unit share changing from [REDACTED]. Ultimately, total quantity sold increases, Steam's profits decrease, and EGS's profits increase. Profits for developers increase, as they are paying a lower weighted commission rate (weighted by units sold across platforms) and selling more units. Consumers are paying a lower total weighted price per game.
- (276) One might notice that prices on Steam increase absent the PMFN. While in the presence of the PMFN, developers were required to set constant prices between Steam and EGS, without the PMFN they are free to set separate prices between platforms, and this is what happens: prices absent the PMFN on Steam and EGS shift to \$61.05 and \$58.37, respectively. Developers increase the relative price on Steam to maximize profits across the two platforms; a relative price decrease on EGS will push users to EGS, allowing developers to earn greater profits through paying reduced fees per game. However, this still results in users paying less per game overall and buying more units overall.
- (277) I note that comparing per-unit prices to consumers, fees to developers, or developer profits within a platform from the PMFN scenario to the non-PMFN scenario is an incomplete

analysis. Developers optimize total profits in each scenario. Doing so requires a consideration of how consumers behave in the presence of pricing across the two platforms; indeed, my model includes a term relating demand on one platform to pricing on the other platform.⁶⁹⁸ So while fees paid on each unit on EGS may increase, developers pay a lower weighted commission rate across all games and generate significantly more profits overall, from \$0 in the PMFN scenario to [REDACTED] in the non-PMFN scenario.

- (278) I also note that the sellers’ economic profits on Steam are negative when the PMFN is in place (but seller profits across both platforms are zero). In a monopolistic setting, the monopoly sets price and quantity to capture surplus of its customers (relative to a competitive setting).⁶⁹⁹ However, Steam’s fee on its platform is constrained by the economic profits of sellers. Sellers optimize profits across both platforms; these profits are dependent on Steam’s fee. If Steam sets its fee too high, causing the seller’s total economic profits across both platforms to be negative, the seller would exit the market. Therefore, Steam’s fee cannot rise above the level where the seller’s total economic profits are zero. See Appendix A.1.
- (279) Lastly, I note that non-PMFN scenario is a transitional state in which platforms, sellers, and consumers are transitioning from a world with a Valve PMFN in place to a world without a Valve PMFN in place. There are only two platforms in this market; however, both are earning economic profits, indicating that in the long run, there would be additional entrants, which would likely cause fees to decrease even more.⁷⁰⁰ As discussed above, the PMFN policy has deterred entry of competing platforms. In a but-for world, more platforms would enter and there would be additional price competition putting downward pressure on Steam’s fees and likely further reducing the quantity sold on Steam at Steam’s higher price level. In these calibrated results, both Steam has more market power absent the PMFN than they would in a true but-for scenario where Steam had not benefited from anticompetitive conduct and more platforms competed in the market. This contrasts with my analysis in Section 8, in which I analyze a but-for world not in the short run after the PMFN is eliminated, but in the long run after the PMFN is eliminated. The period between the two would allow additional platforms to enter the market and prices and quantities to adjust to those entrances.

⁶⁹⁸ In particular, demand for games from platform i decreases by b when the price on i increases, and demand on i increases by d when the price on the alternative platform increases.

⁶⁹⁹ Varian, Hal R. (2014), *Intermediate Microeconomics: A Modern Approach*, 9th ed., New York: W.W. Norton & Company, at 466.

⁷⁰⁰ Varian, Hal R. (2014), *Intermediate Microeconomics: A Modern Approach*, 9th ed., New York: W.W. Norton & Company, at 434. (“Similarly, if a firm is making profits we would expect entry to occur.”)

- (280) By calibrating the model on the current market conditions, the parameters and results reflect Steam's advantage gained through years of Valve's anticompetitive conduct via its PMFN Policy. Over time, or in the but-for world where this conduct had not taken place, Steam's advantageous position gained through the wrongful conduct would decrease and the competition it faced from the competing platforms would be even more vigorous. Also, this model shows a near-term response to the removal of the PMFN Policy based on the real world (*i.e.*, one influenced by Steam's anticompetitive conduct), rather than the end-state market in the but-for world in which the PMFN Policy never existed. Thus, these estimates do not fully model the end-state impact of the absence of the PMFN Policy on all parameter values in the but-for market. To model the competitive equilibrium reached after Valve's PMFN is removed—an equilibrium reached before the start of the class period—I use the LandesPosner model, as discussed in Section 8.
- (281) As shown above, when I apply my Platform Competition Model to the facts and circumstances of the relevant market, it shows all class members are better off in the but-for world without the PMFN. The commission rates publishers pay on Steam alone, and collectively across Steam and EGS (or another platform), decrease in the but-for world, generating higher market-wide seller profits in the but-for world (at increased quantity). This is compelling economic evidence that Valve's PMFN Policy is harming all or virtually all members of the class.

7.3. Yardstick approach

- (282) A yardstick approach is a standard economic method for comparing one business/market to another business/market that is similar in important respects, often as a tool for understanding how a business may have performed “but for” certain actions or events.⁷⁰¹ This approach assumes that in the but-for world, the “business would have performed as the one to which it is being compared, thereby providing a measure (or yardstick)” of the injury.⁷⁰² To implement a yardstick approach, a comparison is made between a focal firm and “a different

⁷⁰¹ Blair, Roger D. and Amanda Kay Esquibel (1994), “Yardstick Damages in Lost Profit Cases: An Econometric Approach,” *Denver University Law Review* 72(1): 113–136, at 113–114.

Evans, A. Elizabeth, Phil J. Innes, and Daniel G. Lentz (2017), “Damages Theories and Causation Issues,” in Roman Weil, et al., ed., *Litigation Services Handbook: The Role of the Financial Expert*, Hoboken, NJ: John Wiley & Sons, Inc., at 23.

⁷⁰² Blair, Roger D. and Amanda Kay Esquibel (1994), “Yardstick Damages in Lost Profit Cases: An Econometric Approach,” *Denver University Law Review* 72(1): 113–136, at 114.

Blair, Roger D. and William H. Page (1995), “‘Speculative’ Antitrust Damages,” *Washington Law Review* 70(2): 423–463, at 451.

Evans, A. Elizabeth, Phil J. Innes, and Daniel G. Lentz (2017), “Damages Theories and Causation Issues,” in Roman Weil, et al., ed., *Litigation Services Handbook: The Role of the Financial Expert*, Hoboken, NJ: John Wiley & Sons, Inc., at 23.

firm from itself, or of a different market from its market, or both.”⁷⁰³ A yardstick approach may also entail creating an index of similar firms and comparing the performance of the company at-issue with the performance of the index.⁷⁰⁴ Importantly, “[d]epending on the allegations and the evidence, courts sometimes seek adjustments for comparability based on the number of customers, purchase volume, product characteristics, competition, role of technology, capitalization, barriers to entry, and established history.”⁷⁰⁵

- (283) In an antitrust analysis, a yardstick approach is one way to understand how a market would have been structured and/or the prices that would have been charged but for the alleged anticompetitive conduct. For example, a yardstick approach may be used to estimate the but-for pricing structure.⁷⁰⁶ As one method of determining what Steam’s take-rate would be in the but-for world, I use a yardstick approach to compare Valve’s commission rate on Steam to platforms in other comparable marketplaces.

7.3.1. Identification of benchmarks

- (284) The potential benchmark marketplaces I consider are primarily two-sided digital platforms.⁷⁰⁷ I consider a variety of criteria, including but not limited to industry timing, *i.e.*, when firms first entered the marketplace, platform structure, geography, monetization structure, product characteristics, and other platform characteristics, such as potential network effects. Below, I discuss benchmark marketplaces that I deem comparable according to these measures.⁷⁰⁸

⁷⁰³ Blair, Roger D. and William H. Page (1995), “‘Speculative’ Antitrust Damages,” *Washington Law Review* 70(2): 423–463, at 453. The comparison may also be based on time periods, as in before-and-after-analysis.

Home Placement Serv., Inc. v. Providence Journal Co., 819 F.2d 1199, 1206 (1st Cir. 1987). (Plaintiff must show “product, firm, and market comparability[.]”)

⁷⁰⁴ Evans, A. Elizabeth, Phil J. Innes, and Daniel G. Lentz (2017), “Damages Theories and Causation Issues,” in Roman Weil, et al., ed., *Litigation Services Handbook: The Role of the Financial Expert*, Hoboken, NJ: John Wiley & Sons, Inc., at 35.

⁷⁰⁵ Ray, Amy W. and Christopher D. Wall (2017), “Antitrust,” in Weil, Roman L. et al., ed., *Litigation Services Handbook*, Hoboken, New Jersey: Wiley & Sons, Inc., at 19.

⁷⁰⁶ McCrary, Justin and Daniel L. Rubinfeld (2014), “Measuring Benchmark Damages in Antitrust Litigation,” *Journal of Econometric Methods* 3(1): 63–74, at 63. (“The two most common approaches to evaluating damages involve the use of yardsticks and benchmarks. In a typical yardstick approach, one compares prices during the period in which the antitrust violation is believed to have had an effect (the “impact period”) to prices in other markets that are deemed to be reasonably comparable to the market at issue.”)

⁷⁰⁷ Here, I am not using market in the formal, antitrust sense, as I have not done a market definition analysis in any of these benchmark industries.

⁷⁰⁸ Note that I also considered digital ride sharing platforms and mobile app stores. These two markets fail to meet a variety of the comparability criteria. For example, for ride sharing the platform facilitates transportation-as-a-service rather than digital transactions as its market product; operates under a different pricing model—utilizing a wholesale pricing model

- (285) Valve's experts may point to Apple or Google's app stores as benchmarks, given that they charge similar commission rates as Steam. But Valve may have been the reason these app

rather than an agency pricing model; and does not operate globally in the way that third-party digital PC game distribution platforms can. See:

Transportation-as-a-service: Lyft, Form 10-K, 2022, at 56. ("We earn service fees and commissions from the drivers either as the difference between an amount paid by a rider based on an upfront quoted fare and the amount earned by a driver based on actual time and distance for the trip or as a fixed percentage of the fare charged to the rider.")

Wholesale pricing: Uber Website, Pricing, <https://www.uber.com/us/en/ride/how-it-works/upfront-pricing/> (accessed 12/20/2023). ("Many data points go into calculating an upfront price, including the estimated trip time and distance from origin to destination, as well as demand patterns for that route at that time. It also includes any applicable tolls, taxes, surcharges, and fees (with the exception of wait time fees).")

Global operations: Uber, Form 10-K, 2022, at 120.

In the mobile app stores marketplace, key companies (e.g., Apple, Google) are facing significant anticompetitive scrutiny, and as such, is not a reliable measure of a but-for commission rate in a competitive market. See:

Apple App Store: *Epic Games, Inc. v. Apple Inc.*, 559 F. Supp. 3d 898, (N.D. Cal. 2021). ("Plaintiff Epic Games, Inc. sued Apple, Inc. alleging violations of federal and state antitrust laws and California's unfair competition law based upon Apple's operation of its App Store.")

Google Play Store: Epic Website, "Epic v Google Trial Verdict, a Win for All Developers," 12/11/2023, <https://www.epicgames.com/site/en-US/news/epic-v-google-trial-verdict-a-win-for-all-developers>.

Business of Apps Website, App Store Data (2022), <https://www.businessofapps.com/data/app-stores/> (accessed 9/16/2022). ("Outside of China, Apple and Google control more than 95 percent of the app store market share through iOS and Android, respectively.")

Note that iOS and Android do not compete with each other at the app store level. According to the U.S. House of Representatives Subcommittee on Antitrust, Commercial and Administrative Law, "[t]he App Store and the Play Store do not compete against one another. Android users cannot access the Apple App Store, and iOS users cannot access the Google Play Store, so the dominance of the Play Store is not constrained by the App Store and vice versa." Instead, each operates in its own ecosystem. See:

U.S. House of Representatives Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, "Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations," 2020, at 95, available at: https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf?utm_campaign=4493-519.

In the iOS ecosystem, the Apple App Store is the only store available. See:

Screen Rant, "Apple Says iOS Users are Not Limited to The App Store, But is That True," 3/26/2021, <https://screenrant.com/apple-ios-app-store-alternatives-iphone-user-dev-restrictions/>. ("In short, iOS app competition is limited by the Apple App Store. It's the only application storefront that iPhones can use without being jailbroken, developers can't publish iOS apps through any other medium, and there's no way for developers to go around the App Store by offering their application directly.")

In the Android ecosystem, the Google Play Store has a significant share of the market. See:

Business of Apps Website, App Store Data (2022), <https://www.businessofapps.com/data/app-stores/> (accessed 9/16/2022). ("Outside of China, Apple and Google control more than 95 percent of the app store market share through iOS and Android, respectively.")

stores launched with a 30% commission rate.⁷⁰⁹ Apple's and Google's app store practices are also subject to antitrust challenges.⁷¹⁰

Online retail marketplaces

- (286) A potentially comparable benchmark is the broad universe of online retail (“e-commerce”) marketplaces. This marketplace includes online retailers across various subdivisions, with some selling all types of products and others playing a role in only niche product categories.
- (287) With a similar timeline to that of the PC game distribution market, general e-commerce marketplaces saw increasing popularity in the mid-1990s and 2000s.⁷¹¹ For example, Amazon became a public company in 1997 and did not become profitable until 2003.⁷¹² In 2000, only 22% of Americans had made purchases online, and this rose to 79% by 2015.⁷¹³
- (288) This marketplace mirrors the third-party digital PC game distribution via platforms market across several different characteristics. Retail e-commerce marketplaces are two-sided digital platforms, with sellers of goods on one side, buyers on the other, and transactions between the two sides facilitated through the platform. Though Amazon is a significant player in the marketplace, it faces competition from other online retail stores, such as e-commerce sites for Walmart, eBay, and Etsy, among others.⁷¹⁴

⁷⁰⁹ Engadget Website, “Apple's App Store antitrust questions will be uncomfortable for Valve,” 07/29/2020, <https://www.engadget.com/apple-google-valve-steam-antitrust-hearings-app-store-221442066.html>. (“In fact, Steam may be the reason Apple and Google launched their marketplaces with a revenue-sharing model that takes 30 percent of an app's earnings, a rate that many developers argue is unnecessarily high.”)

⁷¹⁰ AP News Website, “Google to Pay \$700 Million to US States, Consumers in App Store Settlement,” 12/19/2023, <https://apnews.com/article/google-android-play-store-apps-antitrust-settlement-e4e2f422baa846c66deac90c7866c5fd>.
Top Class Actions Website, “Apple App Developer \$100M Calls Action Settlement,” 1/20/2022, <https://topclassactions.com/lawsuit-settlements/closed-settlements/apple-app-developer-antitrust-100m-class-action-settlement/>.

⁷¹¹ BBC, “The Curious Origins of Online Shopping,” 7/26/2020, <https://www.bbc.com/worklife/article/20200722-the-curious-origins-of-online-shopping>.

⁷¹² Britannica Website, Amazon.com, <https://www.britannica.com/topic/Amazoncom> (accessed 1/4/2024).

⁷¹³ Pew Research Center, “Online Shopping and E-Commerce,” 12/19/2016, <https://www.pewresearch.org/internet/2016/12/19/online-shopping-and-e-commerce/>.

⁷¹⁴ Webretailer, “Online Marketplaces in the USA: Amazon is Not the Only Show in Town,” 5/25/2023, <https://www.webretailer.com/marketplaces-worldwide/online-marketplaces-usa/>.

- (289) The online retail industry generally operates globally.⁷¹⁵ As with the market for third-party digital PC game distribution via platforms, these platforms also operate under an agency pricing model, whereby sellers will set the retail price and the platform will set commissions or take rates on each sale.⁷¹⁶ Platforms in this marketplace typically receive revenue by taking a percentage of each transaction plus, in many instances, a small, fixed fee per transaction.⁷¹⁷ While fees often vary depending on both the platform and the product, they typically fall within the 8% to 15% range.⁷¹⁸
- (290) Thus, the e-commerce retail marketplace operates with similar product characteristics, platform characteristics, geographic scope, and monetization structure as the third-party digital PC game distribution via platforms market.
- (291) I am aware that Amazon has been sued by the FTC alleging violations of the antitrust laws for behaviors that are at least partially analogous to the PMFN conduct challenged here.⁷¹⁹ I take no position on whether the allegations against Amazon are supported by the facts or whether Amazon has violated the antitrust laws, as alleged by the FTC. To the extent the commission

⁷¹⁵ For example, see:

Amazon, Form 10-K, 2022, at 4. (“The worldwide marketplace in which we compete is evolving rapidly and intensely competitive, and we face a broad array of competitors from many different industry sectors around the world.”)

⁷¹⁶ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 109.

⁷¹⁷ For example, see:

Amazon, Form 10-K, 2022, at 42. (“Third-party seller services - We offer programs that enable sellers to sell their products in our stores, and fulfill orders through us. We are not the seller of record in these transactions. The commissions and any related fulfillment and shipping fees we earn from these arrangements are recognized when the services are rendered, which generally occurs upon delivery of the related products to a third-party carrier or, in the case of an Amazon delivery, to the customer.”)

⁷¹⁸ Etsy charges a 6.5% fee with a 3% + \$0.25 payment processing fee per sale and a \$0.20 listing fee. See:

Etsy Website, Sell, [Etsy.com/sell](https://www.etsy.com/sell) (accessed 10/30/2023).

eBay charges a 3–15% fee + \$0.30 per transaction. For the portion of a sale above a certain threshold, eBay often charges a lower commission fee. See:

eBay Website, Selling Fees, <https://www.ebay.com/help/selling/fees-credits-invoices/selling-fees?id=4822> (accessed 1/31/2024).

Amazon charges 8–20% + either \$0.99 per item sold or \$39.99 per month. Amazon Device Accessories have a 45% commission. See:

Amazon Website, Pricing, <https://sell.amazon.com/pricing> (accessed 9/25/2023).

Walmart charges 6–20%. See:

Walmart Website, Referral Fees, <https://marketplace.walmart.com/referral-fees/> (accessed 1/31/2024).

⁷¹⁹ See, e.g., JD Supra Website, “FTC Sues Amazon for Illegally Maintaining Monopoly Power,” 9/29/2023, <https://www.jdsupra.com/legalnews/ftc-sues-amazon-for-illegally-3560920/>.

rate in this benchmark marketplace reflects anticompetitive conduct, it is a conservative benchmark for purposes of this case.

Online vacation home rental

- (292) Another potential comparable marketplace is for online vacation home rentals. This consists of two-sided digital platforms with property owners and guests on either side of the marketplace transacting with one another as facilitated by the platform. Companies that operate in this marketplace include Airbnb and VRBO, among others.
- (293) The marketplace timing and growth for online vacation home rentals accommodations in the late 1990s and 2000s also make the industry a suitable comparison to the relevant marketplace in this case.⁷²⁰ The vacation home rental marketplace VRBO started in 1995, eventually followed by HomeAway and Airbnb's launches in 2005 and 2008, respectively.⁷²¹
- (294) While a vacation rental home is a physical good/service and a digital PC game is a digital good, the similarities between the marketplace characteristics outweigh that difference. Platforms in the vacation rental home booking marketplace monetize by taking a service fee from hosts, the guests, or a combination of the two.
- (295) For example, Airbnb takes a 3% service fee from the property host and adds on a 14% service fee to guests.⁷²² This differs slightly from the payment model present in the market for third-party digital PC game distribution via platforms, where the platform only takes a service fee one side of the market, yet still represents a monetization structure whereby the platform operates as a distribution agent and does not set the price, instead collecting a fee from platform transactors.

⁷²⁰ The Guardian, "How 25 Years of the Web Inspired the Travel Revolution," 3/12/2014, <https://www.theguardian.com/travel/2014/mar/12/how-25-years-of-the-web-inspired-travel-revolution>.

⁷²¹ Seattle Times, "Expedia buys HomeAway for \$3.9 billion," 11/4/2015, <https://www.seattletimes.com/business/expedia-buys-homeaway-for-39-billion/>.

The Guardian, "How 25 Years of the Web Inspired the Travel Revolution," 3/12/2014, <https://www.theguardian.com/travel/2014/mar/12/how-25-years-of-the-web-inspired-travel-revolution>.

Vrbo Website, About Page, <https://www.vrbo.com/about/> (accessed 1/4/2024).

⁷²² Airbnb, "How much does Airbnb charge Hosts?" 3/14/2023, <https://www.airbnb.com/resources/hosting-homes/a/how-much-does-airbnb-charge-hosts-288>.

7.3.2. But-for take rate

(296) Based on the above discussion, I conclude that the reasonably comparable benchmarks for the market for third-party digital PC game distribution via platforms are e-commerce marketplaces and vacation home rental marketplaces.⁷²³ By analyzing the take rates in these marketplaces, I am able to draw reasonable inferences about the commission structure on the Steam platform. Below, I have shown the take-rates of competitors in these marketplaces.

Table 4: Take Rates in Benchmark Markets⁷²⁴

Market	Competitor	Take rate	Additional fees	Notes
E-commerce marketplaces	eBay	3-15%	+ \$0.30 per transaction	
E-commerce marketplaces	Amazon	8-20%	+ \$0.99 per item or \$39.99 per month	
E-commerce marketplaces	Walmart	6-20%		
E-commerce marketplaces	Etsy	6.5%	3% + \$0.25 payment processing fee; \$0.20 listing fee	
Vacation home marketplaces	Airbnb	17%		3% to host, 14% to guests
Vacation home rental marketplaces	VRBO	11–20%	3% payment processing fee	5% to host, 6–15% to guests

⁷²³ I do not opine to whether or not there are anticompetitive implications in these comparable marketplaces. Should there be anticompetitive concerns in any of these comparable marketplaces, utilizing the take rates would represent an upper-bound on a competitive but-for commission.

⁷²⁴ Etsy takes 9.5% + \$0.45 per sale. Sellers pay a \$0.20 listing fee, a 6.5% transaction fee, a 3% payment processing fee, and an added \$0.25 payment processing fee per sale. See:

Etsy Website, Sell, [Etsy.com/sell](https://www.etsy.com/sell) (accessed 10/30/2023).

eBay takes anywhere from 3–15%, with an additional \$0.30 per sale. For most product categories, if the sale is upwards of \$7,500, the listed percentage applies to the portion of the sale up to \$7,500 and there is an additional 2.35–3% for the portion of the sale above \$7,500. See:

eBay Website, Selling Fees, <https://www.ebay.com/help/selling/fees-credits-invoices/selling-fees?id=4822> (accessed 1/31/2024).

Amazon takes 8–20% + \$0.99 per item sold or \$39.99 per month. Amazon takes 45% for Amazon device accessories. See: Amazon Website, Pricing, <https://sell.amazon.com/pricing> (accessed 9/25/2023).

- (297) As discussed above, some of the major industry participants in the online retail marketplace include eBay, Amazon, Etsy, and Walmart. These firms monetize their platforms by charging a percentage fee of anywhere between 3% and 20% from the seller side and charge nothing directly to the buyer side.
- (298) The majority of take rates for Etsy, eBay, Amazon, and Walmart fall between 8% and 15%, with select product categories such as jewelry, fine art, and gift cards at 20% on various sites.⁷²⁵ On eBay, Amazon, and Walmart, the rate structure is tiered, where the percentages decrease for higher priced goods (for example, 15% for the first portion of the sale up to a specific value and then a lower percentage, such as 2.35%, for the remainder of the purchase price over a certain number).⁷²⁶ This means the effective take rate is actually lower than the rate listed.
- (299) In the vacation home rental marketplace, the two principal market participants for vacation home rentals, VRBO and Airbnb, operate under a slightly different business model where they charge both sides of the market, however, both take approximately 17–20% from both sides of the platform collectively.⁷²⁷

Walmart takes 6–20%. Walmart takes 6% for personal computers. See:

Walmart Website, Referral Fees, <https://marketplace.walmart.com/referral-fees/> (accessed 1/31/2024).

Similarly, VRBO charges a 5% commission fee with a 6–15% service fee for guests, totaling 11%–20%. See:

Upgraded Points, "VRBO vs. Airbnb for Guests & Hosts [Comparing Fees, Listings, Cancellation Policies]," 8/22/2023, <https://upgradedpoints.com/travel/vrbo-vs-airbnb-for-guests-and-hosts/>.

⁷²⁵ Amazon Website, Pricing, <https://sell.amazon.com/pricing> (accessed 9/25/2023).

eBay Website, Selling Fees, <https://www.ebay.com/help/selling/fees-credits-invoices/selling-fees?id=4822> (accessed 1/31/2024).

Walmart Website, Referral Fees, <https://marketplace.walmart.com/referral-fees/> (accessed 1/31/2024).

⁷²⁶ eBay Website, Selling Fees, <https://www.ebay.com/help/selling/fees-credits-invoices/selling-fees?id=4822> (accessed 1/31/2024).

Amazon Website, Pricing, <https://sell.amazon.com/pricing> (accessed 9/25/2023).

Walmart Website, Referral Fees, <https://marketplace.walmart.com/referral-fees/> (accessed 1/31/2024).

⁷²⁷ Airbnb takes a 3% service fee from the property owner and adds on a 14% service fee to guests, for a total of 17%. See:

Airbnb, "How much does Airbnb charge Hosts?" 3/14/2023, <https://www.airbnb.com/resources/hosting-homes/a/how-much-does-airbnb-charge-hosts-288>.

Similarly, VRBO charges a 5% commission fee with a 6–15% service fee for guests, totaling 11%–20%. See:

Upgraded Points, "VRBO vs. Airbnb for Guests & Hosts [Comparing Fees, Listings, Cancellation Policies]," 8/22/2023, <https://upgradedpoints.com/travel/vrbo-vs-airbnb-for-guests-and-hosts/>.

- (300) As the above take rates in the retail e-commerce and vacation home rental marketplaces also generally fall within the 15% to 20% range, this range of rates suggests that platforms in these marketplaces compete in part through pricing. As such, a but-for take rate in the relevant market would likely conservatively fall somewhere between 15% and 20%.
- (301) Because a yardstick approach indicates that the market but-for commission rate would be between 15% and 20%—below Valve’s 30% commission rate and effective rates from its tiered commission system—all or virtually all putative class members were impacted by the supracompetitive fees charged by Valve.

7.4. Empirical approach

- (302) I also deploy an empirical approach, which looks to the actual-world facts and circumstances to see if any economic insights can be gleaned from Valve’s reactions and responses to real-world events. When possible, economists often turn to “natural experiments” to assess what would happen in the absence of certain conduct.⁷²⁸ One way a natural experiment can occur is when one observes two different time periods, one with specific conduct and one without.⁷²⁹ By examining the difference between the two time periods, all else equal, one can infer the

⁷²⁸ ThoughtCo, “What Are Natural Experiments and How Do Economists Use Them?,” 4/10/2019, <https://www.thoughtco.com/natural-experiments-in-economics-1146134>. (“A natural experiment is an empirical or observational study in which the control and experimental variables of interest are not artificially manipulated by researchers but instead are allowed to be influenced by nature or factors outside of the researchers’ control. Unlike traditional randomized experiments, natural experiments are not controlled by researchers but rather observed and analyzed.”; “In the social sciences, particularly economics, the expensive nature and limitations of traditionally controlled experiments involving human subjects has long been recognized as a limitation for the development and progress of the field. As such, natural experiments provide a rare testing ground for economists and their colleagues. Natural experiments are used when such controlled experimentation would be too difficult, expensive, or unethical as is the case with many human experiments.”)

⁷²⁹ The Royal Swedish Academy of Sciences, “Natural Experiments Help Answer Important Questions,” 2021, at 1, available at: <https://www.nobelprize.org/uploads/2021/10/popular-economicsciencesprize2021-3.pdf>. (“One way of establishing causality is to use randomised experiments, where researchers allocate individuals to treatment groups by a random draw. This method is used to investigate the efficacy of new medicines, among other things, but is not suitable for investigating many societal issues – for example, we cannot have a randomised experiment determining who gets to attend upper-secondary school and who does not. Despite these challenges, the Laureates have demonstrated that many of society’s big questions can be answered. Their solution is to use natural experiments – situations arising in real life that resemble randomised experiments. These natural experiments may be due to natural random variations, institutional rules or policy changes.”)

The Royal Swedish Academy of Sciences, “Answering Causal Questions Using Observational Data,” 10/11/2021, at 1, available at: <https://www.nobelprize.org/uploads/2021/10/advanced-economicsciencesprize2021.pdf>. (“David Card began to analyze a number of core questions in labor economics using ‘natural experiments’, i.e., a study design in which the units of analysis are exposed to as good as random variation caused by nature, institutions, or policy changes.”)

causal effect of the conduct.⁷³⁰ Valve’s PMFN Policy has been in place for many years. Thus, there is no pre- and post-PMFN time period that could lead to a reasonable natural experiment. Nonetheless, some platforms did enter the marketplace during the class period, *e.g.*, EA, Ubisoft, Epic, and others.⁷³¹ While meaningfully effective entry was rendered impossible by Valve’s conduct (see Section 6.2), studying the economic effects of these entry attempts sheds some light into what a but-for world free of Valve’s anticompetitive parity enforcement may look like.

- (303) Epic launched EGS on December 6, 2018.⁷³² Epic’s goal in launching the platform was “to bring [gamers] great games, and to give game developers a better deal [than Steam’s commission system.]”⁷³³ Valve documents identified Epic as a Steam competitor.⁷³⁴ Rather

⁷³⁰ ThoughtCo, “What Are Natural Experiments and How Do Economists Use Them?,” 4/10/2019, <https://www.thoughtco.com/natural-experiments-in-economics-1146134>. (“Natural experiments are most effective when they mimic as closely as possible the existence of test and control groups of controlled experiments, which is to say that there is a clearly defined exposure to some condition in a clearly defined population and the absence of that exposure in another similar population for comparison. When such groups are present, the processes behind natural experiments are said to resemble randomization even when researchers do not interfere. Under these conditions, observed outcomes of natural experiments can feasibly be credited to the exposure meaning that there is some cause for belief in a causal relationship as opposed to simple correlation. It is this characteristic of natural experiments — the effective comparison that makes a case for the existence of a causal relationship — that distinguishes natural experiments from purely non-experimental observational studies.”)

The Royal Swedish Academy of Sciences, “Natural Experiments Help Answer Important Questions,” 2021, at 3, available at: <https://www.nobelprize.org/uploads/2021/10/popular-economicsciencesprize2021-3.pdf>. (“It would be easy to believe that situations which enable natural experiments are very unusual, especially those that can be used to answer important questions. Research conducted over the past 30 years has shown that this is not the case: natural experiments occur frequently. For example, they may arise due to policy changes in some regions of a country, admission cut-offs in higher education, or income thresholds in tax and benefit systems, which mean that some individuals are exposed to an intervention while other, similar, individuals are not. There is thus unintended randomness that divides people into control and treatment groups, providing researchers with opportunities for uncovering causal relationships.”)

⁷³¹ See Section 4.1.2.

⁷³² Epic Games, “The Epic Games Store is Now Live,” 12/6/2018, <https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live>.

⁷³³ Epic Games, “The Epic Games Store is Now Live,” 12/6/2018, <https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live>. (“Our goal is to bring you great games, and to give game developers a better deal: they receive 88% of the money you spend, versus only 70% elsewhere. This helps developers succeed and make more of the games you love.”)

The Verge, “Valve’s New Steam Revenue Agreement Gives More Money to Game Developers,” 11/30/2018, <https://www.theverge.com/2018/11/30/18120577/valve-steam-game-marketplace-revenue-split-new-rules-competition>. (“Normally, Valve takes around 30 percent of all game sales on Steam, with some exceptions for games from smaller developers in its Steam Direct program. That will remain the case for the first \$10 million in sales a game maker or publisher earns.”)

⁷³⁴ Valve, “Steam Biz – 2019 Recap,” 2019 (VALVE_ANT_0019719–721, at VALVE_ANT_0019721).

Valve, “GDC 2020 – Competitor Analysis,” 2020, (VALVE_ANT_0019400–02, at VALVE_ANT_0019400–01), available at Scott Lynch, Dep. Tr., 10/13/2023, Exhibit 156.

Valve, “2021 Competitor Analysis,” 2021 (VALVE_ANT_0019716–18, at VALVE_ANT_0019717).

than entering the market as a price-taker, Epic’s strategy was, and remains, to try to attract developers and publishers to EGS by offering a lower commission rate and initial free use of Epic’s gaming engine.⁷³⁵ Specifically, Epic charges developers and publishers a commission rate of 12%, compared to Valve’s 30%.⁷³⁶ Epic also offers developers free use of Epic’s Unreal Engine until the gross revenue of the product exceeds \$1 million.⁷³⁷ When a product exceeds \$1 million in gross revenue, Epic charges developers a 5% royalty for use of its engine.⁷³⁸ Deposition testimony from Mr. Lynch indicates that Epic’s revenue share “was a selling point for some developers” and “was one of the things that piqued their interest.”⁷³⁹

- (304) Because of the Valve PMFN, Epic was also forced to use non-price inducements to attempt to compete against Steam. One strategy was to implement exclusive deals with developers, cutting out Steam and its users for the initial release of a game. These exclusive offerings include high-profile games such as *Metro Exodus*, *The Division 2*, *Red Dead Redemption 2*, and *Borderlands 3* and smaller indie-developed games such as *Ooblets*, *No Straight Roads*,

Valve, Competitive Landscape Analysis, undated (VALVE_ANT_1221442–44, at VALVE_ANT_1221442). (“We’re seeing a lot of competing stores surface on the PC – Apple Arcade, Google Stadia, Epic Game Store, Discord, Kongregate, to say nothing of publishers running their own stores like Battlenet, Uplay and Bethesda.net.”)

⁷³⁵ Valve, “GDC 2020 – Competitor Analysis,” 2020, (VALVE ANT 0019400–02, at VALVE ANT 0019400–01), available at Scott Lynch, Dep. Tr., 10/13/2023, Exhibit 156.

Valve, “2021 Competitor Analysis,” 2021 (VALVE ANT_0019716–18, at VALVE_ANT_0019716).

Game Informer, “Epic Launches Digital Games Store with 88 Percent Revenue Going to Developers,” 12/4/2018, <https://www.gameinformer.com/2018/12/04/epic-launches-digital-games-store-with-88-percent-revenue-going-to-developers>.

Teknos Associates, The Battle for Digital Gaming Distribution, <https://www.teknosassociates.com/the-battle-for-digital-gaming-distribution/> (accessed 1/30/2023).

⁷³⁶ Teknos Associates, The Battle for Digital Gaming Distribution, <https://www.teknosassociates.com/the-battle-for-digital-gaming-distribution/> (accessed 1/30/2023).

⁷³⁷ Epic Games, Unreal Engine Download Instructions, <https://www.unrealengine.com/fr/download> (accessed 5/17/2023).

⁷³⁸ Epic Games, Unreal Engine Download Instructions, <https://www.unrealengine.com/fr/download> (accessed 5/17/2023).

⁷³⁹ Scott Lynch, Dep. Tr., 10/13/2023, at 174:18–175:5.

Q. And that was a thing that developers liked, was Epic’s revenue share, right? A. I think that one of the -- I think that was one of the things that piqued their interest. Q. It was a selling point for some developers? A. Yeah.”)

Manifold Garden, *Superliminal*, and *Wattam*.⁷⁴⁰ According to Epic CEO Tim Sweeney, these exclusives “significantly assist developers with product funding and invest in marketing and awareness” and “these efforts bring in new customers to [the Epic Games] store.”⁷⁴¹

- (305) Epic has also attempted to compete with Valve’s platform by acquiring other game studios, thereby shifting popular games from Steam to EGS.⁷⁴² In 2019, Epic acquired Psyonix, the developers of *Rocket League*.⁷⁴³ In 2020, *Rocket League* became free to play on EGS and was no longer available for new users to download on Steam.⁷⁴⁴ In 2021, Epic acquired Tonic Games Group, the developers of *Fall Guys*.⁷⁴⁵ As with *Rocket League*, *Fall Guys* was later offered as a free-to-play game on EGS and was no longer available for new users to download on Steam.⁷⁴⁶ The threat from EGS elicited a reaction from Valve.

⁷⁴⁰ Insider, “The Creator of ‘Fortnite’ is Trying to Shake Up the PC Gaming Industry – Here’s Why a Lot of Folks are Furious About It,” 8/19/2019, <https://www.businessinsider.com/epic-games-store-situation-2019-4#4-the-backlash-to-the-epic-games-store-has-stirred-criticism-of-epics-relationship-with-tencent-a-major-chinese-stakeholder-4>.

Tech Radar, “Epic Games Store Snatches Up Eight Exclusive Indie Games,” 8/30/2019, <https://www.techradar.com/news/epic-games-store-snatches-up-eight-exclusive-indie-games>.

PC Gamer, “Epic Isn’t Done with Epic Games Store Exclusives, It’s Just Focused on Big Ones,” 3/9/2023, <https://www.pcgamer.com/epic-isnt-done-with-epic-games-store-exclusives-its-just-focused-on-big-ones/>.

⁷⁴¹ Forbes, “Epic Games Stores Has Hit \$680 Million in Revenue, 108 Million Customers,” 1/14/2020, <https://www.forbes.com/sites/mattperetz/2020/01/14/epic-games-store-has-hit-680-million-in-revenue-108-million-customers/?sh=da7f96d4b99a>. efforts bring in new customers to our store, rather than just sending more business to the incumbent.”)

⁷⁴² Variety, “Epic Games to Acquire ‘Rocket League’ Developer Psyonix, Game Shifts to Epic Game Store,” 5/1/2019, <https://variety.com/2019/gaming/news/epic-games-to-acquire-psyonix-1203202663/>.

Rocket League, “Rocket League Going Free to Play This Summer,” 7/21/2020, <https://www.rocketleague.com/news/rocket-league-going-free-to-play-this-summer/>.

IGN, “Fall Guys Has Been Removed from Steam, But Will Still Receive Full Support,” 6/21/2022, <https://www.ign.com/articles/fall-guys-steam-delisted-will-still-recvie-full-support>.

⁷⁴³ The Verge, “Epic Buys Rocket League Developer Psyonix, Strongly Hints it Will Stop Selling the Game on Steam,” 5/1/2019, <https://www.theverge.com/2019/5/1/18525842/epic-games-psyonix-acquisition-rocket-league-fortnite-unreal-deal>. (“Fortnite creator Epic Games announced today that it’s acquired the independent game development studio Psyonix, makers of the massively popular vehicular soccer game Rocket League.”)

⁷⁴⁴ Rocket League, “Rocket League Going Free to Play This Summer,” 7/21/2020, <https://www.rocketleague.com/news/rocket-league-going-free-to-play-this-summer/>.

⁷⁴⁵ Epic Games, “Tonic Games Group, Makers of ‘Fall Guys’, Joins Epic Games,” 3/2/2021, <https://www.epicgames.com/site/en-US/news/tonic-games-group-makers-of-fall-guys-joins-epic-games>.

⁷⁴⁶ Epic Games, “Tonic Games Group, Makers of ‘Fall Guys’, Joins Epic Games,” 3/2/2021, <https://www.epicgames.com/site/en-US/news/tonic-games-group-makers-of-fall-guys-joins-epic-games>.

IGN, “Fall Guys Has Been Removed from Steam, But Will Still Receive Full Support,” 6/21/2022, <https://www.ign.com/articles/fall-guys-steam-delisted-will-still-recvie-full-support>.

(306) Months before the EGS’s launch, Valve held internal discussions regarding changing its revenue share.⁷⁴⁷ Mr. Lynch testified that the motivation for the revenue share change was

[REDACTED]

[REDACTED]⁷⁴⁸ A key publisher Valve was targeting to stay on Steam was Ubisoft; however Valve failed. In 2019, Ubisoft announced that it would stop releasing new games on Steam and put *Division 2* exclusively on EGS.⁷⁴⁹ On November 26, 2018, Valve had learned from multiple sources about EGS’s possible launch within the following week and

[REDACTED]

[REDACTED]⁷⁵⁰ Valve remarked that it [REDACTED]

[REDACTED]

[REDACTED]⁷⁵¹ The next day, Epic’s CEO, Tim Sweeney, wrote to Valve, confirming the launch of EGS in the first week of December.⁷⁵² In the same email, Mr. Sweeney told Valve that a “timely

⁷⁴⁷ See, for example:

Scott Lynch, Dep. Tr., 10/12/2023, at 96:10–14. (“Q. Also in late 2018, specifically November 26th, Steam is discussing a change to their revenue sharing; right? A. We had been discussing a change for a long time, but we were also discussing it in November.”)

Valve, “Steam Rev Share – Group Update,” c. 10/2018 (VALVE_ANT_0046076.pptx, at slide 4).

Valve, “Policy Proposal – Refresh,” c. 9/2018 (VALVE_ANT_0058993.pptx, at slide 1).

⁷⁴⁸ Scott Lynch, Dep. Tr., 10/12/2023, at 102:7–18, 96:10–97:12. [REDACTED]

⁷⁴⁹ Dark Catt, “Epic Boss Say Exclusives Policy Will Change If Steam Adjust Their Revenue Share,” 4/29/2019 (DarkCatt_0001084–86, at DarkCatt_0001085). (“Ubisoft has entered into a partnership with the Epic Games Store and move most of its PC releases over from Steam to Epic, starting with The Division 2 and extending to Anno 1800 as well.”)

GameSpot, “Ubisoft Explains Why It Doesn’t Release Games On Steam,” 8/29/2019, <https://www.gamespot.com/articles/ubisoft-explains-why-it-doesn't-release-games-on-st/1100-6469502/>. (“It was a business decision to not put new releases on Steam and focus on the Epic Store and Ubisoft Store[.]”)

⁷⁵⁰ Valve, Emails Regarding New Revenue Share Communication, 11/26/2018–12/1/2018 (VALVE_ANT_0415674–684, at VALVE_ANT_0415679–680, VALVE_ANT_0415683–84).

⁷⁵¹ Valve, Emails Regarding New Revenue Share Communication, 11/26/2018–12/1/2018 (VALVE_ANT_0415674–684, at VALVE_ANT_0415674).

⁷⁵² Valve, Email Regarding EGS Launch, 11/27/2018 (VALVE_ANT_0059658).

move by Valve to improve Steam economics for all developers would make a great difference[,]" hinting at Valve's revenue share.⁷⁵³

- (307) On November 30, 2018, shortly before the launch of EGS, but after learning that EGS was coming on market with a commission rate lower than 30%,⁷⁵⁴ Valve announced "new revenue share tiers for games that hit certain revenue levels."⁷⁵⁵ Instead of taking 30% of all revenue for a given game, Valve announced it would take 30% of lifetime revenues up to \$10 million, 25% of lifetime revenues between \$10 million and \$50 million, and 20% of all lifetime revenues over \$50 million.⁷⁵⁶ See discussion in Section 3.3.4.
- (308) Concern over Epic's entry and threat of potential competition in the third-party digital PC game distribution via platforms market directly led to Valve's tiered commission rate change. Steam's tiered commission structure represents a limited response to the competitive challenge it perceived in 2018, limiting the benefits to a relatively small number of publishers while changing nothing for the vast majority of publishers. Valve responded to the perceived competition without altering its rate structure for the overwhelming proportion of publishers. More importantly, the tiered structure introduced kept commission rates at supracompetitive, albeit somewhat lower, levels. In fact, Steam's effective commission rate across all developers from November 30, 2018 through December 31, 2022 was still [REDACTED] according to Valve's transaction data, still above any potential but-for commission rate, as determined in Section 7.3 or from the more formal but-for rate analysis outlined below.⁷⁵⁷

Forbes Website, About Tim Sweeney, <https://www.forbes.com/profile/tim-sweeney/?sh=7d9a03ef67b3> (accessed 2/6/2024).

⁷⁵³ Valve, Email Regarding EGS Launch, 11/27/2018 (VALVE_ANT_0059658).

⁷⁵⁴ Valve, Emails Regarding New Revenue Share Communication, 11/26/2018–12/1/2018 (VALVE_ANT_0415674–84, at VALVE_ANT_0415683–84).

⁷⁵⁵ Steam, "New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement," 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

⁷⁵⁶ Lifetime revenue towards each commission tier includes any revenue on or after October 1, 2018. See:

Steam, "New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement," 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

⁷⁵⁷ Valve Transaction Data, 11/30/2018–12/31/2022. "See: 06_Effective_rates_after_tiers.R" A small share of revenue is associated with outlier calculated commission rates due to the timing of recorded partner payments or rounding error from small transactions. To be conservative, I calculate the above effective rate using the top 15 calculated commission rates between November 30 2018 and December 31, 2022, which account for [REDACTED] of revenue in Valve's transaction data over this time. The effective rate for all calculated commission rates associated with positive revenue over this time is modestly higher, at [REDACTED].

- (309) In the but-for world, where there was no PMFN, Steam would have likely faced a more expansive competitive threat and likely much earlier than Epic's entrance. Steam would have faced multiple credible competitors, who would have sought to attract the largest games to their platforms to attract users and build network effects, as Steam did. Once those competitors had succeeded in building network effects, they would then become more attractive options for publishers of smaller games and those smaller games would in turn be more attractive to competitors. In such a competitive context, Steam would likely face pressures to both (1) further lower its commission rate for the largest games that entered Steam's tiered commission structure and (2) lower its commission rates for smaller games that did not enter Steam's tiered commission structure.⁷⁵⁸
- (310) As I discussed above, despite both Valve's initial reaction to Epic's entry and Epic's strategies to compete with Steam, EGS has been largely unsuccessful as a direct result of Valve's monopoly power and the PMFN Policy. See discussion in Section 6.2. In the framing of Boik and Corts, because Epic entered as a low-cost alternative, its strategy of competing on price is thwarted by Steam's monopoly power and PMFN policy; consumer price *has* to be equal, and thus, users want to be on Steam where there are better features, more users, more developers, and more games. Because of Valve's expansive base of users, developers, and publishers, Epic has had to focus on growth as opposed to profitability,⁷⁵⁹ all the while accomplishing neither to a meaningful degree. As discussed in Section 6.2, Epic has been unprofitable and has failed to command a meaningful share of the relevant market. Additionally, many publishers who left Steam and signed exclusive deals with Epic have done so because of Epic's advances and money guarantees that were sometimes [REDACTED] [REDACTED].⁷⁶⁰ However, these movers were quintessential "hit and run" shifts; many of these publishers have since returned back to Steam after the expiration of their exclusive deals with Epic. See Section 4.1.3.

⁷⁵⁸ Mankiw, N. Gregory (2012), "The Market Forces of Supply and Demand," in N. Gregory Mankiw, ed., *Principles of Microeconomics*, Mason, Ohio: South-Western Cengage Learning, at 66. ("[W]e assume that markets are perfectly competitive. To reach this highest form of competition, a market must have two characteristics: (1) the goods offered for sale are all exactly the same, and (2) the buyers and sellers are so numerous that no single buyer or seller has any influence over the market price. Because buyers and sellers in perfectly competitive markets must accept the price the market determines, they are said to be price takers.")

⁷⁵⁹ WCCF Tech, "Epic Games Store Still Isn't Profitable Despite Promises It Would Be By 2023," 11/7/2023, <https://wccftech.com/epic-games-store-not-profitable-2023/>. ("Yesterday, Epic Games Store boss Steve Allison took the stand, and admitted the storefront still wasn't turning a profit. At this point, Allison says the main aim is still to grow the store's userbase, rather than turn big profits (or any profits at all).")

⁷⁶⁰ Scott Lynch, Dep. Tr., 10/12/2023, at 163:3-9. [REDACTED]

- (311) While Epic has failed to meaningfully compete with Steam, its 12% commission rate represents a realistic floor on a competitive but-for commission rate that is both sustainable and profitable. As discussed above, Epic’s inability to compete is not as a result of its commission rate. In fact, Epic has indicated publicly that the 12% commission rate is profitable and sustainable.⁷⁶¹ Epic’s court documents reveal that Epic determined the 12% rate to be “competitive, sufficient to cover its costs of distribution and allow for further innovation and investment in EGS.”⁷⁶² Additionally, according to an internal Epic email, Epic determined that even dropping the percentage split that Epic takes on each sale to 10% would have still allowed the company to be operate that portion of the business profitably.⁷⁶³ In a Q&A discussion in December 2018, Tim Sweeney stated that “[i]n [Epic’s] analysis, stores charging 30% are marking up their costs by 300% to 400%. But with developers receiving 88% of revenue and Epic receiving 12%, this store will be a profitable business for us.”⁷⁶⁴
- (312) Additional evidence indicates a 12% (or lower) take-rate would be sustainable for other platforms. In response to the launch of the EGS, Discord announced that it would only charge a 10% commission rate, allowing developers to keep 90% of revenue from their games.⁷⁶⁵ Discord’s CEO stated that “it does not cost 30 percent to distribute games in 2018,” and that “[a]fter doing some research, we discovered that we can build amazing developer tools, run them, and give developers the majority of the revenue share.”⁷⁶⁶ Discord’s response to the

⁷⁶¹ PC Gamer, “Most Game Devs Don’t Think Steam Earns its 30% Revenue Cut,” 4/28/2021, <https://www.pcgamer.com/most-game-devs-dont-think-steam-earns-its-30-revenue-cut/>. (“Epic maintains that its 12% cut will be enough to profit in the long term, challenging the idea that game distributors need to take 30% to be viable.”)

Ars Technica, “How Long Can Epic Afford to Throw Money at the Epic Games Store,” 4/12/2021, <https://arstechnica.com/gaming/2021/04/how-long-can-epic-afford-to-throw-money-at-the-epic-games-store/>. (“You might think Epic is incurring those losses because it only takes a 12 percent cut of third-party game revenues, compared to the industry-standard 30 percent cut on other digital storefronts. On the contrary, though—in its own court filings, Epic says that 12 percent revenue chunk has been “sufficient to cover its costs of distribution and allow for further innovation and investment in EGS.”)

⁷⁶² *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR-TSH, Findings of Fact and Conclusions of Law Proposed by Epic Games, inc., at ¶¶ 399, 405 (N.D. Cal. 2021). (“Prior to deciding on the 12% revenue share, EGS considered its own costs and revenues and studies the revenue shares of competing distributors of PC games. Epic decided to charge developers a 12% revenue share after it concluded that 12% would be competitive, sufficient to cover its costs of distribution and allow for further innovation and investment in EGS.”; “EGS’s 12% transaction fee is sufficient to cover the variable costs of running EGS, including payment processing, customer service and bandwidth.”)

⁷⁶³ Epic, Internal Emails re: Costs of Running Diesel Business, 6/6/2018 (EPIC_VALVE_0000004–06, at EPIC_VALVE_0000004).

⁷⁶⁴ Epic, “Diesel Q&As for Tim from Embargoed Media Outlets,” c. 12/4/2018 (EPIC_VALVE_0000058–72, at EPIC_VALVE_0000059).

⁷⁶⁵ GamesIndustry.biz, “Discord store offering developers a 90/10 revenue split,” 12/14/2018, <https://www.gamesindustry.biz/discord-store-offering-developers-a-90-10-revenue-split>.

⁷⁶⁶ The Verge, “Discord’s game store tries to top Steam and Epic by offering developers more money,” 12/14/2018, <https://www.theverge.com/2018/12/14/18139843/discord-pc-games-store-revenue-split>.

commission rates announced by Epic reflects the behavior of a third-party digital PC game distribution platform lowering prices in response to increased competitive pressure. Microsoft similarly announced a lower commission rate following Epic’s entry. In an April 2021 post on Xbox Wire, Microsoft stated that “the developer share of Microsoft Store PC games sales net revenue will increase to 88%, from 70%. A clear, no-strings-attached revenue share means developers can bring more games to more players and find greater commercial success from doing so.”⁷⁶⁷ Similarly to EGS, Discord and Microsoft’s lack of success came as a result of Steam’s monopoly power and PMFN policy, as opposed to the commission rate they charged. See discussion in Section 6.2.

- (313) Thus, in the but-for world, Steam’s advertised commission rate would be lower than the lowest tier rate of 20% that Steam adopted for high-revenue games. The Platform Competition Model approach, yardstick approach, and empirical approach conducted above suggest a but-for take rate of between 12% and 20%. Epic’s 12% commission rate represents an effective floor that would still allow for Steam and other platforms to operate profitably, while the platform competition model approach and yardstick approach suggest a commission rate between 15% and 20%. Together, all three approaches provide complementary and consistent evidence that all or virtually all members of the class were injured by Valve’s conduct.

7.5. Assessment of potential counterarguments

- (314) I conclude that Valve’s conduct has harmed all or virtually all putative class members. Potential arguments that the conduct only harmed a subset of developers are unavailing. I address these below.

7.5.1. Publishers with [REDACTED] are impacted

- (315) I have reviewed and analyzed hundreds of Valve’s [REDACTED] agreements with developers and publishers. For a list of these agreements, see Attachment C-1. In my review of these agreements, I have identified three common types of [REDACTED]

- (316) [REDACTED]

⁷⁶⁷ Microsoft Xbox Wire, “Continuing Our PC Gaming Journey in 2021 and Beyond,” 4/29/2021, <https://news.xbox.com/en-us/2021/04/29/continuing-our-pc-gaming-journey-in-2021-and-beyond/>.

[REDACTED]

768

[REDACTED] See:
Valve, SDA Agreement with [REDACTED], 10/10/2006 (VALVE ANT 0040950–964, at VALVE ANT 0040954). [REDACTED]
[REDACTED]
Valve, SDA Amendment No. 5 with [REDACTED], 7/12/2007 (VALVE ANT 0040969–970, at VALVE ANT 0040969). [REDACTED]
[REDACTED]
Valve, SDA Amendment No. 7 with [REDACTED], 8/14/2007 (VALVE ANT 0040943–45, at VALVE ANT 0040944). [REDACTED]
[REDACTED]
Valve, SDA Agreement with [REDACTED], 10/10/2006 (VALVE ANT 0042636–648, at VALVE ANT 0042639). [REDACTED]
[REDACTED]
Valve, SDA Agreement with [REDACTED], 10/20/2008 (VALVE ANT 0038485–499, at VALVE ANT 0038490). [REDACTED]
[REDACTED]

769

See, for example:
Valve, SDA Agreement with [REDACTED], 10/10/2006 (VALVE ANT 0040950–964, at VALVE ANT 0040954). [REDACTED]
[REDACTED]
Valve, SDA Agreement with [REDACTED], 10/10/2006 (VALVE ANT 0042636–648, at VALVE ANT 0042639). [REDACTED]
[REDACTED]
Valve, SDA Agreement with [REDACTED], 10/20/2008 (VALVE ANT 0038485–499, at VALVE ANT 0038490). [REDACTED]
[REDACTED]

770

Valve, SDA Addendum with [REDACTED], 6/26/2017 (VALVE ANT 0058418–19, VALVE ANT 0058418). [REDACTED]
[REDACTED]

Additional examples include agreements with [REDACTED]
[REDACTED]⁷⁷¹

(317) Under various SDAs, Valve has executed technology license addendums. In addition to distributing these publishers’ games, Valve agreed to license its game engine and game content (Valve game(s)’s 3D model, textures, animations, and sound files). [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

⁷⁷¹ Valve, SDA Addendum with [REDACTED], 6/29/2016 (VALVE ANT 0044249–250, at VALVE ANT 0044249). [REDACTED]
[REDACTED]

Valve, SDA Addendum with [REDACTED], 11/10/2015 (VALVE ANT 0037958–59, at VALVE ANT 0037958).
[REDACTED]

Valve, SDA Addendum with [REDACTED], 2/6/2018 (VALVE ANT 0475973–74, at VALVE ANT 0475973).
[REDACTED]

Valve, SDA Addendum with [REDACTED], 11/1/2016 (VALVE ANT 0475957–58, at VALVE ANT 0475957).
[REDACTED]

⁷⁷² Valve, Technology License Addendum with [REDACTED], 11/13/2013 (VALVE ANT 0033173–186, at VALVE ANT 0033178). [REDACTED]
[REDACTED]

Valve, Technology License Addendum with [REDACTED], 3/3/2016 (VALVE ANT 0035565–578, at VALVE ANT 0035570). [REDACTED]
[REDACTED]

Valve, Technology License Addendum with [REDACTED], 8/21/2017 (VALVE ANT 0026942–955, at VALVE ANT 0026947). [REDACTED]
[REDACTED]

[REDACTED]

(318) Valve has entered into some SDAs wherein it has agreed to [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

(319) Even with these [REDACTED] agreements, these publishers are impacted by the PMFN Policy. As discussed above in Section 7.2, the fees associated with a high-cost platform with a PMFN are higher than would be the case absent the PMFN. Thus, [REDACTED], because they are based on the supracompetitive rates set by Valve, are themselves supracompetitive. Any [REDACTED] agreement on fees would still be higher than if all fees—[REDACTED]—were based on a competitive commission rate. Further, [REDACTED]
[REDACTED]

[REDACTED]

Valve, [REDACTED] Addendum with [REDACTED], 11/5/2015 (VALVE ANT 0020330–343, at VALVE ANT 0020335).
[REDACTED]

773 See, for example:
Valve, SDA Amendment No. 15 with [REDACTED], 5/1/2012 (VALVE ANT 0042576–580, at VALVE ANT 0042577).
[REDACTED]

Valve, SDA Amendment No. 17 with [REDACTED], 5/1/2013 (VALVE ANT 0042571–75, at VALVE ANT 0042572).
[REDACTED]

774 Valve, SDA Agreement with [REDACTED], 10/1/2014 (VALVE ANT 0021209–225, at VALVE ANT 0021215).
[REDACTED]

None of those situations speak to the underlying commission structure.

7.5.2. Selective enforcement of PMFN impacts all publishers

- (320) Valve may argue that it has only sporadically enforced the PMFN, only against certain publishers and in certain discrete situations. However, as an economic matter, this argument misses the mark. Valve’s PMFN Policy enforcement has reduced *platform* competition. By blocking the emergence of viable alternative platforms, *all* publishers were denied the opportunity to utilize those alternative platforms—not only those who faced direct enforcement. This view misses the practical impact of even selective enforcement as a signaling device and as presenting a credible threat to any publisher considering violating the PMFN policy in order to charge consumers lower prices.
- (321) PMFN Policy enforcement against high-revenue publishers limits the ability of rival platforms to compete effectively with Steam. Valve may prioritize efforts among its highest drivers of revenue, which, consequently, have the most visibility in the relevant market. As discussed above in 5.2, large publishers such as [REDACTED], and others experienced Valve’s PMFN enforcement, and thus put on first-hand notice of Valve’s PMFN Policy. Even if only these large publishers were directly impacted by Valve’s PMFN Policy, that would take a major portion of the available commerce off the market for alternative platforms, depriving those alternative platforms of the volume they would need to succeed against Valve. Moreover, when Steam enforces the PMFN against some of its largest publishers, it sends a strong signal to all publishers of its willingness to take significant steps to enforce the policy. Put differently, if publishers such as [REDACTED] and others are vulnerable to punishment for violating the PMFN, no publisher is safe.
- (322) Clearly, publishers knew of Valve’s parity rules and abided by them.⁷⁷⁵ Speculation around cross-platform PMFN enforcement occurs in industry news outlets.⁷⁷⁶ Beyond publicly

⁷⁷⁵ Interview with David Rosen, 2/1/2024.

⁷⁷⁶ See, for example:

GameRant, “Valve’s ‘Pricing Parity’ Is Why Hitman 3 Is No Longer Being Discounted,” 1/28/2022, <https://gamerant.com/hitman-3-sale-steam-epic-games-valve-pricing-parity-store-terms/>. (“It basically has to do with Steam’s pricing parity and PC gaming dominance. Essentially, Valve has the monopoly on PC gaming, with a controversial business practice that ‘unofficially’ makes it so that Epic, and likely GOG and Humble Bundle, can’t sell a game at a discounted price if Steam isn’t, essentially meaning that no other platform can undercut the PC gaming giant.”)

Game Informer, “Valve Tightens Up Guidelines for Steam Early Access Titles,” 11/21/2014, <https://www.gameinformer.com/b/news/archive/2014/11/21/valve-tightens-up-guidelines-for-steam-early-access->

available outlets, developers frequently communicate with each other regarding Steam's policies. For example, developers have access to Steamworks Discussions where they can ask questions and communicate about distribution and Steam policies.⁷⁷⁷ In one thread, developers discuss pricing on Steam and Valve's enforcement of price parity.⁷⁷⁸ In response to discussion regarding if the SDA applies only to Steam Keys, a developer notes: "What is written there does NOT only apply to keys, going by Valves words. How much more proof do we need than [V]alve telling another dev 'that they remove their game if the pricing isn[']t equal'. . . and then getting sued for it? 'It is important that you don't give Steam customers a worse deal.' This applies to everything, not just keys."⁷⁷⁹ Another developer's comment demonstrates the compliance that may result from the threat of price parity enforcement: "I wouldn[']t gamble on it by setting a lower price on another store. What I mean is: Every sane/reasonable person would treat it as 'it[']s the rule' until proven otherwise. . . since the alternative is to get kicked from [S]team."⁷⁸⁰ As another example, in a 2018 email thread, indie

titles.aspx. ("Valve confirmed to us updated rules for developers seeking to distribute games using this mechanism and provided the full text of the notification. . . . 4. Don't overcharge Steam customers. We expect Steam customers to get a price for the Early Access game no higher than they are offered on any other service or website. Please make sure that's the case.")

GameRant, "Steam Is Changing How Players Pay for Games Around the World," 10/26/2023, <https://gamerant.com/steam-regional-pricing-us-dollars/>. ("Not only do storefronts have to take regional currencies into consideration, but also competitor pricing. This became apparent a couple of years ago when Epic Games Store's sale of Hitman 3 ended abruptly due to Valve's 'pricing parity' requirement, which means developers can't lower a game's price on other storefronts without doing the same on Steam.")

The Game DiscoverCo Newsletter, "Valve's New Stance on Steam Keys: What to Know?," 2/27/2023, <https://newsletter.gamediscover.co/p/valves-new-stance-on-steam-keys-what>. ("There's even more emphasis on 'no worse deal for Steam customers': the phrasing: 'You should use Steam Keys to sell your game on other stores in a similar way to how you sell your game on Steam' stays in there, but now this second phrase is underlined: 'It is important that you don't give Steam customers a worse deal than Steam Key purchasers.' . . . Valve seems more determined to crack down on low-cost Steam key hawkers: there's new language here: 'If you request an extreme number of keys and you are not offering Steam customers a comparable deal, or if your sole business is selling Steam Keys and not offering value to Steam customers, your request may be denied and you may lose the privilege to request keys.' (Some small companies have been buying out old games with achievements/cards, just to sell their keys in bulk, right?)")

⁷⁷⁷ Steam Website, Steamworks Development, <https://steamcommunity.com/groups/Steamworks> (accessed 12/20/2023). ("This community of Steamworks developers is intended for sharing information regarding Steam and Steamworks development. Please use the Discussions to ask Steam and Steamworks related questions. You'll also find FAQs and responses to other common questions in there.")

Valve, Discussion Relating to Steam Development Landscape, 8/2015 (VALVE_ANT_DB_0017081.html) ("Valve does not communicate with developers at all really, you can try sending them emails or leaving a post on the forums but they do not tend to respond. On the forums in particular it tends to be other developers answering a question.")

⁷⁷⁸ Valve, Steamworks General Discussion – Pricing on Other Stores, 5/2021 (VALVE_ANT_2174032–048).

⁷⁷⁹ Valve, Steamworks General Discussion – Pricing on Other Stores, 5/2021 (VALVE_ANT_2174032–048, at VALVE_ANT_2174037).

⁷⁸⁰ Valve, Steamworks General Discussion – Pricing on Other Stores, 5/2021 (VALVE_ANT_2174032–048, at VALVE_ANT_2174038).

developers discuss Valve’s commission rate and price parity enforcement.⁷⁸¹ One developer shares a response from Valve regarding Steam Key pricing.⁷⁸² Other developers discuss the existence of price parity policies and the threat of Valve delisting games if developers do not comply.⁷⁸³

- (323) Valve has also told individual publishers that Steam will often choose to stop selling content where price parity is not met on other platforms.⁷⁸⁴ For publishers that need access to Steam’s user base, these indirect threats create pressure to comply and the enforcement actions make those threats credible. Thus, whether Valve intends to enforce pricing parity against an individual publisher, the threat of that enforcement is enough to influence publisher behavior and yield compliance.

7.5.3. Freeriding and showrooming

- (324) While economics literature generally finds PMFN provisions to be welfare reducing.⁷⁸⁵ PMFNs may be justified to protect a platform’s investments and prevent freeriding by individual

⁷⁸¹ Wolfire, Emails Between Indie Developers, 11/19/2018–11/21/2018 (WOLFIRE_00035624–633).

⁷⁸² Wolfire, Emails Between Indie Developers, 11/19/2018–11/21/2018 (WOLFIRE_00035624–633, at WOLFIRE_00035627–28). (“Here’s the response I got from folks over there. Either they’re being coy about the shift or this was always policy and someone over there is just finally encouraging others to enforce it? Or maybe I just got a response from the pro-denying-keys faction, who knows. The total refusal of giving extra visibility for a discount is. . . dense, though, and suggests they don’t especially care about the developer in question or why they do bundles in the first place. Maybe a bigger fish can leverage them harder there, no idea. [Valve’s response was:] “Sure, happy to explain our thinking around keys! There really hasn’t been a sea change in relation to keys, we just ask that all of our partners treat Steam customers fairly and give them the same deal that you’re offering bundle customers. . . . This is something we apply equally to all partners big and small, and it isn’t tied to visibility or placement on the store so we don’t offer guaranteed featuring or anything like that. We just ask that if you plan to use Steam keys to distribute your game, that you give Steam folks a fair deal.”)

⁷⁸³ Wolfire, Emails Between Indie Developers, 11/19/2018–11/21/2018 (WOLFIRE_00035624–633, at WOLFIRE_00035624–25). (“[T]here should be a lot of push back against this from devs when [V]alve asks. Even something as simple as ‘Humble paid \$xxx,xxx for that deal, we’d do 90% off on [S]team if you offered that for it as well[.]’ I like this idea, and am tempted to try it. But I don’t see Valve’s incentive, as they hold all of the (literal and figurative) keys. The thing that scares me is that Valve could simply say, ‘You didn’t play by the rules and give us similar discount within x months, so we’re going to delist your game.’ And that would be that.”; “It’s not about wanting [V]alve to offer buyouts (they won’t), just a counter for price parity. Put up or shut up, offer a similar deal as we’re getting on other platforms or price parity doesn’t (and shouldn’t) apply. [A]lso I reread their distribution contract, and it says nothing about price parity[.]”)

⁷⁸⁴ See Section 5.2.1.

⁷⁸⁵ Baker, Jonathan B. and Fiona Scott Morton (2018), “Antitrust Enforcement Against Platform MFNs,” *Yale Law Journal*, 127(7): 2176–2202, at 2201. (“This Feature has explained why MFNs employed by online platforms can harm competition by keeping prices high and discouraging entry, notwithstanding the possibility that some MFNs may reduce inefficient freeriding. The prevalence of MFN contract terms on online platforms and the steadily growing share of GDP spent on such platforms suggest that greater antitrust enforcement against anticompetitive platform MFNs could have noticeable benefits for productivity and consumer welfare.”)

sellers.⁷⁸⁶ For example, consider an online travel agency like Booking.com that has invested in building a platform that allows travelers to compare hotels and then book at the one that best suits their needs. If individual hotels could offer lower prices on their own websites, travelers could use Booking.com to find the best match and then book at the lowest rate on the hotel's website. This type of freeriding by the hotel (or "showrooming" by the platform) would reduce the incentive for the platform to invest in the valuable service of matching travelers to hotels.⁷⁸⁷ That could potentially provide a pro-competitive justification for a parity clause, at least on a temporary basis until the platform were able to recoup its initial investment.

- (325) The argument does not fit the facts here. Steam was able to recoup the costs of implementing any valuable fixed investment costs (such as a search mechanism) [REDACTED]. While Steam's reported after-tax net profit was negative in each year from [REDACTED], lifetime after-tax net profits turned positive [REDACTED], finishing the year with [REDACTED] in lifetime after-tax net profits.⁷⁸⁸ Thus Steam was able to recoup its initial investments by [REDACTED] at the latest, and the investment justification would not apply as an empirical matter after [REDACTED].

Calzada, Joan, Ester Manna, and Andrea Mantovani (2021), "Platform Price Parity Clauses and Market Segmentation," *Journal of Economics & Management Strategy*, 31(3): 609–637, at 626. ("In general, our model confirms the general wisdom that price restrictions such as PPCs [price parity clauses] are detrimental to social welfare.")

Wang, Chengsi and Julian Wright (2020), "Search Platforms: Showrooming and Price Parity Clauses," *RAND Journal of Economics*, 51(1): 32–58, at 32. ("Platform fees raise the possibility of showrooming, in which consumers search on a platform but then switch and buy directly to take advantage of lower direct prices. In settings like this, search platforms like Booking.com have adopted price parity clauses, requiring firms to offer their best prices on the platform, arguing this is needed to prevent showrooming. However, despite allowing for showrooming in our model, we find that price parity clauses often harm consumers.")

Heresi, Jose Ignacio (2023), "Platform Price Parity Clauses and Consumer Obfuscation," *Journal of Industrial Economics*, 71(1): 291–322, at 314. ("When price parity clauses are endogenously chosen by platforms, I find that the unique equilibrium involves price parity clauses being set if and only if this leads to higher obfuscation and prices. This result supports the notion that PPCs are likely to increase prices and harm consumers.")

⁷⁸⁶ Wang, Chengsi and Julian Wright (2020), "Search Platforms: Showrooming and Price Parity Clauses," *RAND Journal of Economics*, 51(1): 32–58, at 33. ("The main defense put forward for PPCs is that they are needed to prevent 'showrooming.' Consumers might use the platform to search for a suitable firm, but then complete their purchase on the firm's own website if the firm offers a lower price when it sells directly (which it may do to avoid the platform's fee). Showrooming, which is a form of free-riding, may therefore undermine a platform's ability to operate. A PPC (either narrow or wide) eliminates the restriction on the platform's fee implied by such showrooming.")

⁷⁸⁷ Baker, Jonathan B. and Fiona Scott Morton (2018), "Antitrust Enforcement Against Platform MFNs," *Yale Law Journal*, 127(7): 2176–2202, at 2183, Fn 22. ("Online platform MFNs in particular have been justified as protecting investment incentives by preventing freeriding (or 'showrooming')."; "Buyers 'showroom' when they visit a store to examine a product before buying online at a discount. This type of practice is a type of freeriding.")

Wang, Chengsi and Julian Wright (2020), "Search Platforms: Showrooming and Price Parity Clauses," *RAND Journal of Economics*, 51(1): 32–58, at 33. ("Showrooming, which is a form of free-riding, may therefore undermine a platform's ability to operate.")

⁷⁸⁸ See Attachment D-1.

- (326) Further, while the potential for procompetitive effects exists theoretically, at least when a platform first launches, academic literature suggests that the harmful effects of PMFNs are more significant than the potential procompetitive effects. Wang and Wright (2020) find that “despite allowing for showrooming in [their] model, . . . price parity clauses often harm consumers.”⁷⁸⁹ Baker and Scott Morton (2018) similarly conclude that “platform MFNs generally harm competition, except in narrow circumstances in which freeriding concerns are especially strong.”⁷⁹⁰
- (327) The availability of other PC game platforms and discrepancies in the size of game libraries make it unlikely that users would choose to switch between platforms to search and then purchase a game. As discussed in Section 4.1.2, many competing platforms were established years after Steam. Therefore, for many years since Steam’s launch, users would not have a viable alternative platform to purchase a game on after finding it on Steam. Steam also offers many more games compared to competing platforms. For example, as discussed in Section 6.2, EGS offered 1,548 games in 2022, compared to Steam offering approximately 90,000 games as of early 2024. As another example, in 2020, GOG had over 4,700 products, compared to Steam’s 43,798 games.⁷⁹¹ This discrepancy means that for tens of thousands of games, users could not purchase a game found on Steam on another platform and there is no free-riding risk.
- (328) Users may not have the same incentive, described above, of only using Steam for its searching functionality. While users can search for games on Steam, Steam provides *other* features and functionalities that at least some users find valuable.⁷⁹² Steam’s primary service is to provide

⁷⁸⁹ Wang, Chengsi and Julian Wright (2020), “Search Platforms: Showrooming and Price Parity Clauses,” *RAND Journal of Economics*, 51(1): 32–58, at 32.

⁷⁹⁰ Baker, Jonathan B. and Fiona Scott Morton (2018), “Antitrust Enforcement Against Platform MFNs,” *Yale Law Journal* 127(7): 2176–2202, at 2178.

⁷⁹¹ GOG.com, “Check These Facts and Numbers About GOG,” 4/27/2021, https://www.gog.com/news/check_these_facts_and_numbers_about_gog.

See Attachment G-1.

⁷⁹² Steam Website, Store Search, <https://store.steampowered.com/search/?term=> (accessed 11/1/2023).

Steam Website, About, <https://store.steampowered.com/about/> (accessed 1/12/2024). (Features listed on an About Steam webpage include Steam Chat, Game Hubs, Steam Broadcast, Steam Workshop, and Early Access to Games.)

Epic, “Steam User and Epic Games Store User Profile Survey July 2019,” 7/2019 (EPIC_VALVE_0000073–0308, at EPIC_VALVE_0000088–89, EPIC_VALVE_0000121). (Lists the features that users find to be influential when deciding whether to purchase a game on Steam and shows that “[m]ost Steam features have high usage and all are highly rated[.]”)

users with a platform to purchase and play games.⁷⁹³ As such, users who use Steam to search ultimately become integrated into the Steam platform. In this case, the free-riding risk is ultimately mitigated.

- (329) Due to the reasons described above, the potential procompetitive effects of Valve’s PMFN are relatively small (if they exist at all) compared to the anticompetitive effects as described in Section 5.1.

7.5.4. Consumer regret

- (330) Valve may justify its PMFN Policy by claiming that users may experience regret when they purchase a game on Steam and then see the game offered for a lower price on another platform.⁷⁹⁴ Valve considers consumer regret to be detrimental to a user’s experience on Steam, and as such, uses it as a justification to enforce its PMFN Policy.⁷⁹⁵ For example, Valve employee Kassidy Gerber, informs ██████████ in an email that Valve will be delisting

⁷⁹³ Valve Corporation Website, About Us, <https://www.valvesoftware.com/en/about> (accessed 10/17/2023). (“We created Steam in 2003 to serve as a digital content distribution channel, before app stores existed. It’s since grown and evolved into a platform for thousands of creators and publishers to deliver content and establish direct relationships with their customers. The Steam Community enables millions of players to do likewise, sharing entertainment and ideas, and making friends.”)

Steam Website, About, <https://store.steampowered.com/about/> (accessed 1/12/2024). (“Steam is the ultimate destination for playing, discussing, and creating games.”)

⁷⁹⁴ DJ Powers, Dep. Tr., 9/29/2023, at 57:5–24. (“Q. Well, here what we’re talking about is refusing to provide Steam keys because there is some sort of disadvantage for Steam customers, and Mr. Giardino here is saying Steam keys are kind of a distraction here. It’s more about the broader practice of offering a better deal elsewhere. So what I’m trying to understand is why is Valve’s policy that we’re not going to grant Steam keys if you’re offering better prices elsewhere, regardless of whether you’re using Steam keys? A. Are we talking about this specific example? Q. Sure. A. Okay, in this specific example, we’re having a conversation with a partner because we believe they’re offering the product for a better price elsewhere. Q. And that’s a problem? A. As I’ve described before, when a game is offered for a better price elsewhere, we believe that customers that purchase that game on Steam are likely to regret that purchase.”)

⁷⁹⁵ DJ Powers, Dep. Tr., 9/29/2023, at 120:22–121:22. (“Q. And am I right that the conversations that you’ve testified about today, about discounting elsewhere and the quote, unquote, regret that Valve is trying to prevent from Steam users is meant to help preserve Valve’s share of all revenues derived from Steam sales? A. No. Q. Not at all? A. No, we’d be perfectly happy if the -- in a situation like we’ve discussed, if the partner said, okay, well we will lower the price on Steam to match the price as it is elsewhere. That lower price would result in less revenue share for us. Q. Well, you actually participated yourself in one of the documents I looked at in literally removing a Triple-A title from the Steam store because it was priced lower elsewhere? A. Uh-huh. Q. That is completely eliminating any revenue that Valve could derive from sales of that title? A. That’s true. Q. So Valve was completely willing to just forsake all that revenue because that title was being sold for lower elsewhere? A. It’s important to us that customers have a good experience on Steam.”)

Jason Ruymen, Dep. Tr., 9/19/2023, at 35:13–17. (“Q. And customers are disadvantaged on Steam if the price on Steam is higher than the price at another – another retailer; is that right? A. One of the things we try not to do on Steam is have a customer regret their purchase.”)

one of its games due to price discrepancies between Steam and other platforms.⁷⁹⁶ When describing Valve’s decision, she states: “Ultimately [REDACTED] retail strategy is yours to control in whatever way you see fit. However, it is our job as stewards of the platform is [sic] to protect Steam customers and to ensure that they are being treated fairly. We will not knowingly invite customer regret by offering your game at a premium to other retailers.”⁷⁹⁷ As another example, when reaching out to a developer regarding price parity, a Valve employee states: “[P]art of running our store and our sales is treating Steam customers well. We’re not really interested in running a store where customers regret their purchases or wish they bought somewhere else. Our general attitude historically has been that if Steam customers don’t get a fair shake from a publisher or developer, we just opt not to sell the game in question, rather than make a bad offer that erodes user trust in the store.”⁷⁹⁸

(331) In the examples above, Valve frames enforcement of its PMFN Policy as a way to protect its users from regretting Steam purchases and to ensure users have a good experience on Steam. However, as discussed in Section 6 and above in Section 7, consumers are *worse off* and not protected as Valve suggests, due to Steam’s monopoly power and the maintenance of that monopoly power through Valve’s PMFN Policy. [REDACTED]

[REDACTED]⁷⁹⁹ Steam’s monopoly power has limited the number of viable alternative platforms available to users and has resulted in a lack of innovation and improvement of Steam features, impacting consumers’ ability to choose a

⁷⁹⁶ Valve, Emails Regarding [REDACTED] on Steam, 10/9/2017 (VALVE_ANT_2565882–84, at VALVE_ANT_2565883–84), available at Cassidy Gerber, Dep. Tr., 10/5/2023, Exhibit 107. (“We are writing to let you know that, as of 10am this morning, we are no longer selling [REDACTED] on Steam. We did this because [REDACTED] was offering the preorder at a price on Steam that was significantly higher than what was available at other retailers for the same version of the game.”)

⁷⁹⁷ Valve, Emails Regarding [REDACTED] on Steam, 10/9/2017 (VALVE_ANT_2565882–84, at VALVE_ANT_2565884), available at Cassidy Gerber, Dep. Tr., 10/5/2023, Exhibit 107.

⁷⁹⁸ Valve, Emails Regarding [REDACTED], 12/22/2016 (VALVE_ANT_0127888–89, at VALVE_ANT_0127888).

See also:

Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–390, at VALVE_ANT_0053489), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45. (“One of the ongoing issues we struggle with is how do we react when games run significant discounts on competing stores, but do not make those discounts available on Steam. . . . In this situation, we usually reach out to the developer and explain that the price on [REDACTED] makes the price on Steam look high. We believe this will result in regret purchases by Steam customers when that customer realizes they could have bought the same product elsewhere for less money. The ask from us to the partner is to match the lower price running on [REDACTED].”)

⁷⁹⁹ Valve, Emails Regarding Steam Key Blog Post, 1/11/2018–1/13/2018 (VALVE_ANT_0499430–34, at VALVE_ANT_0499433).

platform that best fits their needs.⁸⁰⁰ Further, Valve’s high commission rate also leads to inflated consumer prices, as developers compensate for the high commission rate by passing through part of the commission to consumers.⁸⁰¹ Valve’s PMFN Policy maintains these inflated consumer prices on alternative platforms in the relevant market and forces alternative platforms to shift their platform design and business models closer to Steam’s high fee model.⁸⁰² As detailed below in Sections 8.3.5 and 8.4, absent Steam’s PMFN Policy, Steam’s but-for commission rate would be lower than the effective commission rate, and those savings would be at least partially passed through to the consumer, leading to lower consumer prices. Thus, despite Valve’s claim that their PMFN Policy can limit consumer regret to promote a positive experience on Steam, consumers would ultimately benefit from the removal of the PMFN Policy and a more competitive market. Indeed, a possible “consumer regret” argument would mean little more than Valve regrets that consumers learn that lower prices are available from other stores.

⁸⁰⁰ See Section 6.3.

⁸⁰¹ See Section 7.2.1.

⁸⁰² See Sections 5.1 and 7.2.1

8. Economic Quantification of Class-Wide Damages

8.1. Overview

- (332) Below, I review the literature on one-sided and two-sided platforms, and in that context, I examine Steam's pricing behavior and conclude that, while it acts as a two-sided platform in facilitating transactions between publishers and users, its pricing structure is implemented on only one side of the platform. This allows me to apply economic models focusing on a single price. While the *direct* pricing on the Steam platform is one-sided in that Valve only collects fees from publishers, the commission rate charged impacts consumer prices, as discussed above and in this section. As such, Valve's pricing to publishers affects *both* sides of the market.
- (333) I introduce the Landes and Posner model⁸⁰³ to demonstrate how Steam's price and quantity would be lower in the but-for world under a shifted firm-specific demand curve. Using the intuition from Landes and Posner, I describe my model for determining the but-for price. First, I calculate real-world values that correspond to the various inputs of the model. Using these real-world input values and an estimate of the but-for market share using shares by publisher, I determine Steam's commission rate in the but-for world, and therefore have a methodology to determine damages for each putative class member based on the available transaction data.
- (334) My model derived from Landes and Posner confirms my conclusion that all or virtually all class members are impacted. Specifically, my model describes the but-for competitive equilibrium reached after platforms enter the market during the period of time after Valve's PMFN is eliminated. In that competitive equilibrium, Valve's but-for commission rate is substantially lower than in the real world, and lower even than the commission rate in the interim state market described by my Platform Competition Model. In this way, my impact analysis and my damages analysis together describe the transition from a market dominated by Valve, to one with increased competition, reduced pricing, and increased output (Platform Competition Model), to a fully competitive market with much lower pricing (Landes and Posner model) and increased output. But for Valve's PMFN Policy, the market would have reached this end state by no later than January 28, 2017 and likely earlier.

⁸⁰³ Landes, William M. and Richard A. Posner (1981), "Market Power in Antitrust Cases," *Harvard Law Review* 94(5): 937-996.

(335) Rochet and Tirole (2006) define a two-sided platform as:⁸⁰⁴

... one in which the volume of transactions between end-users depends on the structure and not only on the overall level of the fees charged by the platform. A platform's usage or variable charges impact the two sides' willingness to trade once on the platform and, thereby, their net surpluses from potential interactions; the platforms' membership or fixed charges in turn condition the end-users' presence on the platform. The platforms' fine design of the structure of variable and fixed charges is relevant only if the two sides do not negotiate away the corresponding usage and membership externalities.

(336) A key feature of Rochet and Tirole (2006)—and the one that makes my analytic approach appropriate for analyzing a platform such as Steam—is that a market is defined as one-sided if the quantity of transactions depends *only* on price level and not price structure across the two sides:⁸⁰⁵

Consider a platform charging per-interaction charges a^B and a^S to the buyer and seller sides. The market for interactions between the two sides is one-sided if the volume V of transactions realized on the platform depends only on the aggregate price level

$$a = a^B + a^S$$

i.e., it is insensitive to reallocations of this total price a between the buyer and the seller. If by contrast V varies with a^B while a is kept constant, the market is said to be two-sided.

(337) Per Rochet and Tirole, Steam's pricing model is one-sided. Steam has historically only priced on one side of the market (that is, to developers). Steam's headline commission rate, historically set to a flat 30% and more recently tiered according to game revenues, is directly charged to publishers and is deducted by Valve from the price charged by publishers to consumers.⁸⁰⁶

(338) Steam calculates its commission as a percentage of revenue, and not a fixed amount per unit sold;⁸⁰⁷ thus it qualifies as an *ad valorem* fee on the revenues generated by developers. In a

⁸⁰⁴ Rochet, Jean-Charles and Jean Tirole (2006), "Two-Sided Markets: A Progress Report," *The RAND Journal of Economics*, 37(3): 645–667, at 646.

⁸⁰⁵ Rochet, Jean-Charles and Jean Tirole (2006), "Two-Sided Markets: A Progress Report," *The RAND Journal of Economics*, 37(3): 645–667, at 648.

⁸⁰⁶ While the price Steam charges to publishers may impact publisher's pricing to consumers (this is referred to as "marginal price pass through"), the only direct price charged by the platform (*i.e.*, Steam) is the commission rate to publishers. For further discussion on pass through, see Section 8.4.

⁸⁰⁷ The Economist, "Video Games: Ahead of Steam?" 3/15/2019, at 1. ("[Steam] takes a 30% cut of each game sold.")

paper from 2003, Rochet and Tirole describe three conditions under which a system such as Steam’s should be considered price-neutral, all of which apply here.⁸⁰⁸

- a. Lack of transaction costs. Neutrality of pricing requires a lack of “frictions that make it costly for one side of the market to pass through a redistribution of charges to the other side. Often these transaction costs are associated with small stakes for individual transactions[.]” Such frictions are not present on Steam.
- b. Lack of volume-insensitive costs. Neutrality of pricing requires that there are no costs “that a) are influenced by the platform and b) are not proportional to the number of transactions on the platform.” Such costs are not present on Steam.⁸⁰⁹
- c. Lack of constraints on pass-through. Neutrality of pricing requires that the platform not “limit the extent of pass-through.” Valve does not actively manage pass-through.

(339) Rather than pricing separately on both sides of the market, Steam has opted for an agency model in which a supplier sets the final retail price for its good or service and the online retailer keeps a share of the revenue generated by a transaction between a supplier and a consumer.⁸¹⁰ Products such as “e-books, applications for mobile devices . . . , car insurance, and hotel reservations have been sold online using the agency model.”⁸¹¹ The agency model is also used in the Boik-Corts model of platforms, described above. Boik and Corts include a single platform fee and derive implied demand for transactions as a function of a platform’s fees and their competitor’s fee.⁸¹² This contrasts with the “wholesale model” in which “suppliers set wholesale prices and retailers set retail prices[.]”⁸¹³

⁸⁰⁸ Rochet, Jean-Charles and Jean Tirole (2003), “Platform Competition in Two-sided Markets,” *Journal of the European Economic Association* 1(4): 990–1029, at 1019–1020.

⁸⁰⁹ Though Valve charges a \$100 submission fee to developers, this is recouped by developers after the game reaches \$1,000 in adjusted gross revenues across game purchases and in-app purchases. See:

Steam, “Steam Direct Product Submission Fee on Steam,” <https://store.steampowered.com/sub/163632> (accessed 1/5/2024).

I also understand that the software development required for a PC game is not platform specific, that is, the game can be easily ported from one platform to another. See:

GOG Developer Docs, Steam SDK Wrapper, <https://docs.gog.com/steam-sdk-wrapper> (accessed 8/29/2023). (“If you already have a Steam version of your product, you can get it up and running on our platform within minutes, not hours.”)

⁸¹⁰ Johnson, Justin P. (2017), “The Agency Model and MFN Clauses,” *The Review of Economic Studies*, 84(300): 1151–1185, at 1151.

⁸¹¹ Johnson, Justin P. (2017), “The Agency Model and MFN Clauses,” *The Review of Economic Studies*, 84(300): 1151–1185, at 1151.

⁸¹² Boik, Andre and Kenneth S. Corts (2016), “The Effects of Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 112.

⁸¹³ Johnson, Justin P. (2017), “The Agency Model and MFN Clauses,” *The Review of Economic Studies*, 84(300): 1151–1185, at 1152.

- (340) I model the but-for world by assuming that Steam would continue to use an agency model, pricing to one side of the market as a share of retail price. This allows publishers to set prices for their products and decide how much (if any) of Steam’s fees to pass through to consumers. Indeed, when faced with the option to switch to a wholesale model for a particular publisher, Valve rejected this option and retained its agency pricing model.⁸¹⁴ Thus, I evaluate Steam’s but-for price under models with a single, direct price to one side of the platform.

8.2. The Landes and Posner (1981) model

- (341) Landes and Posner present a model that relates firm market power to the price it sets (relative to marginal cost). Landes and Posner define market power as “the setting of price in excess of marginal cost” and formalize their measure of market power using the Lerner Index, as expressed below:⁸¹⁵

⁸¹⁴ Valve, Emails Regarding ██████████ Pricing, 8/15/2014–9/26/2014 (VALVE_ANT_2814337–343, at VALVE_ANT_2814341), available at Connor Malone, Dep. Tr., 11/8/2023, Exhibit 249. (“We understand that the retailers are cutting in to their own margins with their pricing based on a wholesale price. As Steam does not operate on a wholesale model, those practices are not an option, and a different approach is needed.”)

Connor Malone, Dep. Tr., 11/8/2023, at 108:7–109:23. (“Q. And at the bottom you say, ‘We understand that the situation with ██████████ retailers is tricky and we are encouraged by your efforts to help establish price parity.’ Right? A. I did write that. Q. And that’s consistent with Valve’s policy seeking price parity before providing curated marketing or listing the game, right? A. I wouldn’t say that it -- I wouldn’t classify it in terms of a Valve policy. Q. Well, it was your practice at least here that ██████████ needed to achieve price parity for ██████████ or Valve will have to take the game down until that happens, right? A. In this specific case, yes, that is I think how it played out. Q. Now, if you look at page 341, at the bottom there’s a reference to WSP again. Do you see that? A. I do. Q. And then your response, you say, ‘We understand that the retailers are cutting into their own margins with their pricing based on a wholesale price.’ Right? A. Yes, I see that. Q. And that’s indicating that WSP stands for wholesale price, right? A. Yes, I think so. Q. And you say, ‘As Steam does not operate on a wholesale model, those practices are not an option.’ Right? A. Correct. Q. Why was it not an option? A. It was not an option because Valve -- we were not interested in changing our revenue share model at that time. Q. When you say ‘not interested,’ does that mean it was impossible or just Valve didn’t want to do it? A. That we were not interested in doing it at that time.”)

⁸¹⁵ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 940.

Landes and Posner (1981) explain that the “the Lerner index is a measure of a firm’s market power.” See:

Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 941, fn 8.

L_i is the Lerner Index for firm i , P_i and C_i' are respectively price and marginal cost at the firm’s profit-maximizing output, and ϵ_i^d is the firm’s elasticity of demand. See:

Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 940.

Per the equation above, a higher firm demand elasticity means that the quantity the firm sells is more responsive to the price they set. If the quantity reduces more in response to a price increase (demand elasticity is higher), firms that are maximizing their profits will not mark up their prices to the same extent.

Lerner, A. P. (1934), “The Concept of Monopoly and the Measurement of Monopoly Power,” *The Review of Economic Studies* 1(3): 157–175.

$$L_i = \frac{(P_i - C'_i)}{P_i} = \frac{1}{\epsilon_i^d}$$

- (342) Landes and Posner explain that the Lerner Index, L_i , of firm i indicates the relative size of the monopoly mark-up of price, P_i , over marginal cost, C'_i , by firm i .⁸¹⁶ The Lerner Index illustrates the relationship of the firm’s market power to the firm’s price elasticity of demand, ϵ_i^d .⁸¹⁷ Firm i ’s price elasticity of demand quantifies the relationship between the quantity demanded of firm i ’s output and the price that firm i charges; more formally, it is the percentage change in quantity demanded for firm i ’s output in response to a given percentage change in firm i ’s price.⁸¹⁸ Landes and Posner explain that “[s]ince the Lerner [I]ndex is a measure of a firm’s market power, the relevant elasticity is the firm elasticity of demand, for it is the response of the firm’s output to change in its price that determines the degree to which it has market power.”⁸¹⁹
- (343) The Lerner Index is inversely related to a firm’s price elasticity of demand and shows that a higher price elasticity of demand for the firm’s product will result in a lower profit-maximizing mark-up over cost (and vice versa). This makes intuitive sense, as a high elasticity of demand indicates consumers are more sensitive to price changes, all else equal.
- (344) The Lerner Index is regarded by many as the “best-known measure of monopoly power.”⁸²⁰ As discussed above, Steam’s pricing model is price neutral, meaning that no matter who ultimately remits the fee to Valve, the amount the consumer ultimately pays for a game is not affected. This is because the pass-through of the fee adjusts based on who remits the payment.⁸²¹ When such neutrality holds, two-sided markets can be treated as one-sided

⁸¹⁶ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 939.

⁸¹⁷ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 940–41.

⁸¹⁸ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 940–41, fn 8.

⁸¹⁹ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 940–41, fn 8.

⁸²⁰ Elzinga, Kenneth G. and David E. Mills (2011), “The Lerner Index of Monopoly Power: Origins and Uses,” *The American Economic Review* 101(3): 558–564, at 560. (“It is the conventional practice for textbooks in microeconomics and industrial organization to describe the Lerner Index as ‘the best-known’ measure of monopoly power.”)

⁸²¹ This is analogous to the neutrality of tax remittance often covered in introductory economics textbooks. See for example, the discussion of how taxes levied on sellers are equivalent to taxes levied on buyers:

Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 123.

markets.⁸²² This approach is consistent with the Boik-Corts model discussed in Section 7.2 where a single fee is used, just like Steam's actual pricing strategy. In the Boik-Corts model, the platform maximizes its implied demand function with respect to the fee, which means the Lerner Index holds. In fact, I show in Appendix A.3 that the equations used in the Boik-Corts model can be combined and simplified to the Lerner equation, giving the same value for Steam's real-world elasticity of transaction with respect to fees in both approaches.

- (345) Landes and Posner expand on the standard Lerner Index formula by explaining that the firm elasticity of demand—and by extension the firm's market power—can be derived using firm *i*'s market share (S_i), the market elasticity of demand (ϵ_m^d), and the supply elasticity of competing (or “fringe”) firms (ϵ_j^s).⁸²³ The supply elasticity of fringe firms is defined as the percentage increase in the quantity supplied by fringe firms in response to a one percent change in the market price.⁸²⁴ Landes and Posner derive the following equation:

$$\epsilon_i^d = \frac{\epsilon_m^d + \epsilon_j^s (1 - S_i)}{S_i}$$

- (346) Using the above expression, Landes and Posner rewrite the Lerner equation, demonstrating that market power is a function of firm *i*'s market share (S_i), the market elasticity of demand (ϵ_m^d), and the supply elasticity of fringe firms (ϵ_j^s).⁸²⁵

$$L_i = \frac{(P_i - C_i')}{P_i} = \frac{1}{\epsilon_i^d} = \frac{S_i}{\epsilon_m^d + \epsilon_j^s (1 - S_i)}$$

- (347) Landes and Posner observe the following:⁸²⁶
- a. Holding all else constant, higher market demand elasticity yields higher firm elasticity of demand, resulting in a lower Lerner Index and lower mark-up over cost.
 - b. Holding all else constant, higher elasticity of supply of fringe firms yields higher firm elasticity of demand, resulting in a lower Lerner Index and lower mark-up over cost.

⁸²² Rochet, Jean-Charles and Jean Tirole (2003), “Platform Competition in Two-sided Markets,” *Journal of the European Economic Association* 1(4): 990–1029, at 1018. (See also proposition 1 on page 997.)

⁸²³ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 944–945. (They note that “[t]his formula, like the Lerner index, has long been a part of the industrial organization literature” and derive both equations in their appendix.)

⁸²⁴ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 944.

⁸²⁵ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 943.

⁸²⁶ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 945–46.

c. Holding all else constant, higher market share yields a lower firm elasticity of demand, resulting in a higher Lerner Index and a higher mark-up over cost.

(348) This model identifies two mechanisms that will act to increase Steam’s firm demand elasticity and lower its but-for price. First, absent the PMFN, Steam’s market share, S_i , would be lower, leading to a greater firm-specific elasticity of demand. See further discussion and calculation of that market share in Section 8.3.4.

(349) Second, without the PMFN, fringe elasticity of supply would be higher, all else equal. In the presence of a PMFN, fringe firms have a harder time attracting new game developers to their platforms than they would absent a PMFN. In the real world, while fringe platforms can offer discounted commission rates relative to Steam, because of the PMFN, game developers cannot pass through savings to consumers via lower retail prices if they are also distributing through Steam. Without the ability to compete on price, fringe platforms have a harder time attracting consumers to their platforms and, in turn, this leads to difficulty in attracting developers. In the but-for world, with meaningful competition possible between platforms, developers would be able to use lower commission rates offered by fringe platforms to cut retail prices and attract customers, resulting in both an increase in profit margin and quantity sold. This would be attractive to publishers, meaning publishers would more readily supply their games to those platforms that are part of the fringe. Thus, the fringe elasticity of supply would be higher in the but-for world.

8.3. Estimation of the but-for price

(350) I combine the insights gleaned from the Landes and Posner model with assumptions regarding the demand curve for Steam’s digital third-party distribution services to calculate Steam’s commission rate in the but-for world. I start by evaluating the elasticity of demand for Steam’s digital third-party distribution services in the real world. Using that elasticity as an input, I model Steam’s demand based on a linear demand curve. Assuming that Steam’s demand curve in the but-for world would be parallel to its demand curve in the real world, I then use my estimated Steam but-for market share to calculate Steam’s but-for commission rate.⁸²⁷

⁸²⁷ As discussed in Section 3.3.5, there are instances in which users gain access to a game played through Steam through the acquisition of a Steam Key rather than the purchase of the game directly on Steam. In such instances, those purchases are not subject to the Valve commission charge. In the but-for world, I assume that Steam Keys would have been provided and used in the same manner as in the real world and focus my determination of the but-for price solely on those purchases made through Steam and thus subject to the Valve commission charge.

8.3.1. Steam’s real-world Lerner Index

(351) I first evaluate Steam’s Lerner Index in the real world. Recall that the firm’s Lerner Index is a function of its pricing and its marginal costs.

$$L_i = \frac{(P_i - C'_i)}{P_i} = \frac{1}{\epsilon_i^d}$$

(352) Valve has had a historic headline commission rate of 30% on sales of third-party PC content. From January 28, 2017 through December 31, 2022, Steam generated an effective commission rate of [REDACTED],⁸²⁸ a rate that includes periods before and after the implementation of the tiered commission rate.⁸²⁹ For purposes of this analysis, I conclude that the [REDACTED] rate is a reasonable proxy for the effective market commission rate, given Steam’s dominance in the marketplace; the effective market rate charged by Valve is what is relevant, rather than the specific rate paid by each publisher.

(353) I similarly use Valve’s P&Ls over the period of 2017 through 2021 to determine Steam’s costs.⁸³⁰ I convert these costs to a share of transaction value for easy comparison to the commission rate set by Valve. Steam’s total cost of sales during this time were approximately [REDACTED] of transaction value;⁸³¹ Steam’s total operating expenses during this time (including allocated administrative expenses) were approximately [REDACTED] of transaction value.⁸³² Steam’s total taxes (including allocated admin taxes) were [REDACTED] of transaction value. Steam’s cost of sales plus its total operating expenses plus its taxes represent approximately [REDACTED] of transaction value from 2017 through 2021. See Attachment D-7.

⁸²⁸ The calculations presented in this section use rounded values, though I use more precise values in my attachments. Thus, they may differ slightly.

⁸²⁹ Valve Transaction Data, 1/28/2017–12/31/2022. See: "05_Damages.R"

⁸³⁰ Valve’s P&L data is set forth on an annual basis and is available through 2021, and this calculation and all subsequent calculations can be performed on such a basis.

⁸³¹ [REDACTED] See:
Valve, Valve P&L Statements, c. 2022 (VALVE_ANT_2755012_HIGHLY CONFIDENTIAL_ATTORNEY EYES ONLY.xlsx.)

⁸³² [REDACTED] See:
Valve, Valve P&L Statements, c. 2022 (VALVE_ANT_2755012_HIGHLY CONFIDENTIAL_ATTORNEY EYES ONLY.xlsx.)

- (354) The Lerner Index is predicated on firms profit maximizing, that is, pricing based on marginal costs.⁸³³ Rather than calculating Steam's marginal economic costs, I adopt a conservative approach and use all of the accounting costs outlined above. In platform firms like Valve, high fixed costs and low marginal costs are common and result in average total costs that are higher than marginal costs.⁸³⁴ Using a higher cost as the basis for price setting will result in a higher but-for commission rate.⁸³⁵ The Lerner Index relates price to marginal costs through a scaling factor, and thus a greater cost will result in a greater but-for price, all else equal.
- (355) The resulting Lerner Index for Steam from January 28, 2017 through December 31, 2022 is [REDACTED]; Valve's resulting firm elasticity of demand for its distribution services is approximately [REDACTED].⁸³⁶

8.3.2. Linear demand modeling

- (356) I model Steam's demand as linear and use Steam's real-world firm elasticity of demand to calculate the slope of Steam's demand curve.⁸³⁷ An assumption of linear demand is standard

⁸³³ The Lerner Index is derived using the equation for firm profits and by assuming firms try to maximize their profits. A firm's profit-maximizing price is established when the firm sets its marginal revenue equal to marginal cost. See:

Landes, William M. and Richard A. Posner (1981), "Market Power in Antitrust Cases," *Harvard Law Review* 94(5): 937–996, at 984–985.

⁸³⁴ Baumol, William, and Daniel Swanson (2003), "The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria Of Market Power," *Antitrust L.J.* 661–686, at 661. ("The industries that are the hallmark of the "new economy" are characterized by a special cost structure. From software to semiconductors, digital entertainment to biotechnology, and in innovative fields more generally, the standard cost pattern entails sunk outlays that are large and must be incurred over and over again, but the marginal cost of serving an additional customer-is virtually negligible. As economists are well aware, this is only a special case of a more general circumstance, the case of scale economies, where the prices of a firm's products, if set equal to the corresponding marginal costs, will condemn the enterprise to losses.")

⁸³⁵ Note that in cases where average total costs are higher than marginal costs, the competitive price is equal to the average total cost, because "a firm that prices at marginal cost cannot cover its fixed costs (costs that do not vary with output), such as plant and equipment or research and development ('R&D')." See:

Kirkwood, John (2018), "Market Power and Antitrust Enforcement," *Boston University Law Review* 98: 1169–1227, at 1175–1176.

While this changes the interpretation of the markup over marginal costs, it does not impact my use of the markup over marginal cost in the model, because the derivation of the Lerner Index comes from the profit maximizing condition (which is unchanged in a high fixed cost market) and not the competitive price. See:

Landes, William M. and Richard A. Posner (1981), "Market Power in Antitrust Cases," *Harvard Law Review* 94(5): 937–996, at 984–985.

⁸³⁶ Using the Lerner Index formula, I obtain a Lerner Index of [REDACTED]. This gives a firm elasticity of demand of [REDACTED].

⁸³⁷ Demand functions define the "relationship between the price of a good and the quantity demanded[.]" where the quantity demanded is the "amount of a good that buyers are willing and able to purchase."

Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 67.

practice in the economics literature. For example, Boik and Corts employ a linear demand framework and show that it satisfies all the assumptions maintained in the general demand framework.⁸³⁸ Chone and Linnemer provide a detailed history of the extensive use of linear demand models in economics, noting that “[s]ome researchers find it so natural to use linear (direct or inverse) demands (and to derive them from a [Quasilinear Quadratic Utility Model]) that they do not try to give a source[.]”⁸³⁹

(357) The standard formula for firm-specific demand elasticity for firm i is as follows.⁸⁴⁰

$$\epsilon_i^d = -\frac{P_i \partial Q}{Q_i \partial P}$$

(358) In a linear demand model, $-\frac{\partial Q}{\partial P} = m$, where m is a constant.⁸⁴¹ Thus,

$$\epsilon_i^d = m \frac{P_i}{Q_i}$$

(359) Plugging the linear elasticity of demand into the Lerner Index found above results in the following equation.

$$L_i = \frac{(P_i - C_i')}{P_i} = \frac{1}{\epsilon_i^d} = \frac{1}{m \frac{P_i}{Q_i}}$$

⁸³⁸ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 111. (“Boik and Corts (2014) shows that in fact the main results of Section 2 also hold in a more general demand model.”)

Boik, Andre and Kenneth S. Corts (2014), “The Effects of Platform MFNs on Competition and Entry: General and Linear Demand,” *Working Paper*, 1–31, at 6–7. (“We analyze this model under two different scenarios for demand: ‘general’ and ‘linear’. We first assume that an unspecified underlying general demand function induces a unique optimal pricing rule for the single multi-product seller, yielding a differentiable and well-behaved implied demand function on transaction fees, $q_i^*(f)$. We later assume that the underlying demand function is a familiar linear differentiated-products demand function, which we show satisfies all of the assumptions we maintain in the general demand case.”)

⁸³⁹ Chone, Philippe and Laurent Linnemer (2020), “Linear Demand Systems for Differentiated Goods: Overview and User’s Guide,” *International Journal of Industrial Organization* 73: 1–25, at 1. (“The usage of a Linear Demand System for differentiated goods (henceforth LDS) is widespread in oligopoly theory, especially when closed-form solutions are needed.”)

Similarly, they say: “By analogy, no sane economist would look for a reference when using a linear demand like $D(p) = a - bp$.”

⁸⁴⁰ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 985.

⁸⁴¹ In this case, the linear demand for firm i takes the form $q_i(P) = A - mp_i + \phi(p_j)$, where $\phi(p_j)$ is a general function allowing me to be somewhat agnostic to the impact of the opposing firms’ price on quantity since I only need the derivative with respect to p_i . This gives $\frac{\partial Q}{\partial P} = -m$. As an example, Boik and Corts use $q_i(P) = A - mp_i + dP_j$. See:

Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 111.

(360) This can then be simplified (dropping the subscripts for readability) as follows.

$$(P - C) = \frac{Q}{m}$$

(361) In the real world, Steam's effective commission rate is [REDACTED], and its firm elasticity of demand is approximately [REDACTED]. I quantify Q (quantity) as a market share rather than transacted dollars; this will not affect the result, it simply results in a different interpretation of m .⁸⁴² I use [REDACTED] as Steam's real-world market share, as found in Attachment E-1. Therefore, m is equal to approximately [REDACTED].⁸⁴³

8.3.3. Parallel shift in Steam demand

(362) Next, I use the properties of linear demand and assume demand curves in the but-for world are parallel to demand curves in the real world. This simplifies the Landes and Posner model and enables the calculation of Steam's but-for commission rate.

(363) To find the but-for price, I must determine m , the inverse slope of Steam's but-for demand curve, C , Steam's but-for marginal costs, and Q , Steam's but-for quantity.

(364) I assume that m is the same in the real and but-for worlds. This is equivalent to assuming that the absence of the PMFN shifts Steam's demand curve so that it is parallel to its real-world demand curve. Removing the PMFN would decrease the (absolute value of the) slope of the firm demand curve (*e.g.*, a linear firm demand curve would become flatter), which implies an increase in (the absolute value of) m , because the quantity sold on a platform is more responsive to fees without a PMFN. By instead holding the slope (and by extension m) fixed, I am underestimating the but-for (absolute) value of m , therefore overestimating the mark-up over cost in the but-for world (and thus overestimating the but-for commission rate). That is, my estimate of the but-for commission rate is necessarily conservative.

⁸⁴² Dividing Q by the market quantity converts it into a market share.

To see this more explicitly, let Q^m be the current market quantity in dollars; the market share for Steam then is $Q_i = \frac{Q}{Q^m}$.

Now let the value of m calculated with market shares be defined as $m_i = \frac{\partial Q_i}{\partial P} = \frac{\partial \frac{Q}{Q^m}}{\partial P}$. Together, this gives the following.

$$\frac{Q_i}{m_i} = \frac{\frac{Q}{Q^m}}{\frac{\partial \frac{Q}{Q^m}}{\partial P}} = \frac{\frac{Q}{Q^m}}{\frac{\partial Q}{\partial P} \frac{1}{Q^m}} = \frac{1}{Q^m} \frac{Q}{\frac{\partial Q}{\partial P}} = \frac{Q}{m} = (P - C)$$

⁸⁴³ [REDACTED]

(365) Multiple models applicable to this case show that in the but-for world, m would be greater than in the real world. As I discussed above in Section 8.2, in the Landes and Posner (1981) model, the fringe elasticity of supply would increase without a PMFN. That same intuition applies directly to the change in both Valve and fringe firm quantities with respect to the price. The following equation shows how, according to the Landes and Posner (1981) model, m is related to the change in market demand with respect to the price and the change in quantity supplied with respect to price.⁸⁴⁴

$$m = -\frac{\partial Q_i^d}{\partial P} = -\frac{\partial Q_m^d}{\partial P} + \frac{\partial Q_j^s}{\partial P}$$

(366) This equation demonstrates why if m were not held constant, and, instead, I calculated a but for value m^{bf} and a real-world value m^{rw} it would be the case that $m^{bf} > m^{rw}$. First, without a PMFN, fringe firms will increase their quantity supplied by more for a given price change since they would be able to compete on price. This implies $\frac{\partial Q_j^s}{\partial P}$ is larger in the but-for world. Together, these two points imply m is larger in the but for world or $m^{bf} > m^{rw}$. My linear model with a parallel shift in demand holds m constant, which is conservative. This can be seen from the equation above $P - C = \frac{Q}{m}$, a larger value for m leads to a smaller markup over cost and so a lower price.

(367) The Landes and Posner model is not the only model that leads me to the conclusion that $m^{bf} > m^{rw}$. In Appendix A.4 I show that in the Boik- Corts model, removing PMFNs more than doubles the change in Steam’s quantity with respect to price $\left(\frac{\partial Q_i^d}{\partial P}\right)$, which implies m would more than double in the but-for world without a PMFN in place.

(368) I assume that Steam’s costs in the but-for world as a share of transaction value are equivalent to those in the real world, that is, [REDACTED]. See Attachment D-7.

(369) Lastly, I analyze Steam’s but-for market share below in detail.

⁸⁴⁴ Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 985.

$$\begin{aligned} \epsilon_i^d &= m \frac{P_i}{Q_i} \\ \Rightarrow \epsilon_i^d \frac{Q_i}{P_i} &= m \\ \Rightarrow -\frac{P_i}{Q_i} \frac{\partial Q_i}{\partial P} \frac{Q_i}{P_i} &= m \\ \Rightarrow -\frac{\partial Q_i}{\partial P} &= m \end{aligned}$$

8.3.4. But-for market share

- (370) Steam’s but-for market share can be evaluated using a framework based on real-world outcomes from the relevant market. Below, I describe a method for determining Steam’s but-for market share based on Steam revenues generated by Valve-published games and Steam revenues generated by other publishers that later engaged in digital PC game distribution.⁸⁴⁵
- (371) Successful games can drive platform adoption and ultimately platform success. Valve used its highly popular game, *Half-Life 2*, to attract users to Steam in the platform’s early years, that is, around 2004. See Section 3.3. Similarly, Epic leveraged the success of *Fortnite* to accelerate consumer uptake of its Epic Game Store, which launched in late 2018. See Section 7.4. The benefits to a game distribution platform offering exclusive, popular titles have been acknowledged by numerous industry participants. For example, a 2022 presentation from publisher 2K—in which the company considers the business case for operating a stand-alone launcher—notes that “[e]xclusivity can be highly effective at ‘drawing’ users to the platform[.]”⁸⁴⁶ The presentation also noted that, “[w]ithout exclusivity, or other offers, our Launcher offers limited value proposition over Steam/Epic[.]”⁸⁴⁷ A presentation from Epic Games about EGS listed Epic’s ability to secure major timed exclusives as one of two elements of Epic’s “[s]trategy to building a \$1-2 billion PC games business fast”⁸⁴⁸ A 2018 internal presentation on EGS stated that “exclusive 2nd Party titles” would be “meaningful in the long run[.]”⁸⁴⁹ A 2021 internal Activision-Blizzard presentation on battle.net’s platform strategy listed first- and third-party “premium, exclusive PC & mobile games” as an element of battle.net’s platform strategy.⁸⁵⁰ A 2015 document in which Amazon presents its plan to “build a PC game store on Twitch[.]” states that “content is the most important factor in the success of a gaming platform” and that “exclusive games from Amazon Games Studios” would help differentiate Amazon’s offering.⁸⁵¹

⁸⁴⁵ To demonstrate how this method generates a but-for market share for Steam, it is necessary to adopt assumptions about which publishers are included in the calculation as well as the relevant time period. I reserve the right to alter the assumptions presented below in a subsequent report in which I evaluate the merits issues in further detail.

⁸⁴⁶ 2K, “2K Stand-Alone Launcher Business Case,” 2/2022 (TAKE2-00000066-094, at TAKE2-00000086).

⁸⁴⁷ 2K, “2K Stand-Alone Launcher Business Case,” 2/2022 (TAKE2-00000066-094, at TAKE2-00000086).

⁸⁴⁸ Epic, Epic Games Store Presentation, c. 2019 (EPIC_VALVE_0000013-057, at EPIC_VALVE_0000025).

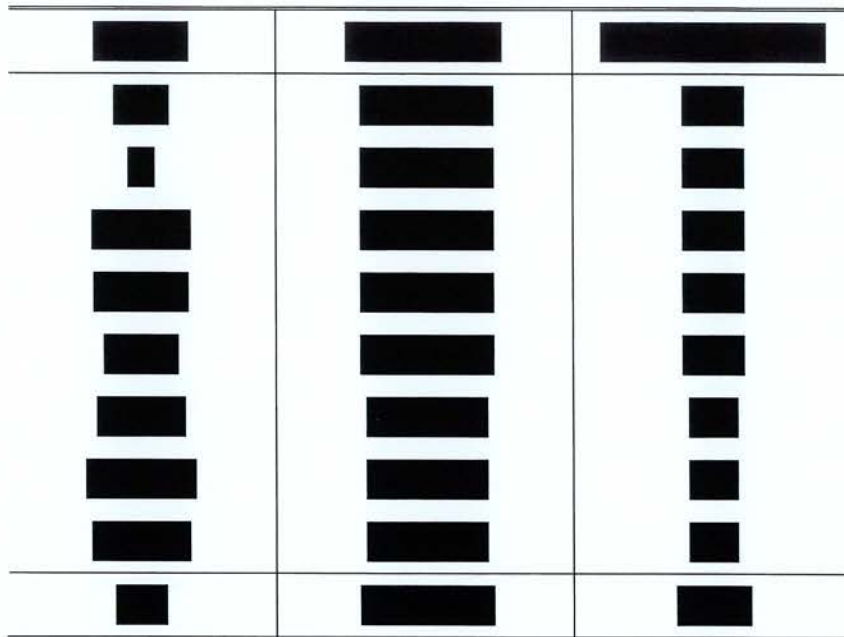
⁸⁴⁹ Epic, Diesel Update, 6/5/2018 (EPIC_VALVE_0000338-362, at EPIC_VALVE_0000361).

⁸⁵⁰ Activision-Blizzard, Battle.net / Platform Strategy, 2/2021 (AB-VALVE-000072-093, at AB-VALVE-000073).

⁸⁵¹ Amazon, Respawn, 12/2015 (AMZ00000384-403, at AMZ00000384, AMZ00000388).

- (372) Multiple publishers—generally those with several popular titles and franchises—have attempted to transition from successful game developer and publisher to distributor of PC gaming content. These publishers include Activision (battle.net), Bethesda (Bethesda.net), CD Projekt (GOG), EA (Origin), Epic (EGS), Microsoft (Microsoft Store), Rockstar (Rockstar Games Launcher), and Ubisoft (Uplay). However, as described in Section 6.2, most of these entrants in the market did not succeed or have struggled to build their market share.
- (373) In the but-for world, the newly entering or existing fringe platforms would have been able to better attract third-party PC content by offering publishers a greater share of transaction value so that such publishers could offer their games at lower prices on these platforms. These lower prices would, in turn, help to attract gamers to the platform. But for Valve's alleged anticompetitive conduct, publishers that continue to operate their distribution platforms would likely have garnered a larger share of the market, and it is likely that at least some of the publishers that stopped operating their distribution platforms would have continued to operate their platforms. Therefore, the but-for world would also include publishers that operate or previously operated PC game distribution platforms as competitors to Steam.
- (374) Valve's ability to attract gamers to Steam through its first-party game offerings also contributed to the platform's ability to attract third-party developers (that is, build network effects). As I note above, other publishers have attempted to utilize a similar model to build their own digital PC game distribution platforms. I thus model the but-for market shares for Valve as well as the publishers that engaged in digital PC game distribution based on the relative success of their games on Steam. To quantify the success of publishers' games, I use a given publisher's share of revenues on Steam among the publishers that have attempted to create distribution platforms as a proxy for the market share of their platforms in the but-for world. However, to the extent that these publishers also publish elsewhere, this approach would likely bias the publishers' shares downward and thus Steam's share upward. Hence, I focus on a period in which publishers likely would have begun to develop their own platforms in the but-for world, but where none had yet done so in the real world, likely generating all or most of their revenues through Steam.
- (375) To calculate each publisher's share of revenues on Steam, I focus on the period between 2008 and 2012. The year 2008 is used as the starting point to calculate revenues, as large publishers such as EA (2008) and Ubisoft (2008) did not offer games on Steam during the platform's initial years. The year 2012 is used as the ending point to calculate revenues, as publishers such as EA began to launch new titles exclusively on their own platforms beginning in 2012. Figure 6 below shows the publishers' shares of revenue on Steam.

Figure 6: Share of Steam Revenues Among Selected Publishers, January 2008-December 2012



(376) Steam’s share of revenues among publishers that operate or operated a PC game distribution platform was [REDACTED] between January 2008 and December 2012.⁸⁵² As I note above, the presence of successful games is a key driver of platform success. The publishers shown in Figure 6 above released [REDACTED] of the top-50 best-selling games on Steam between January 2010 and December 2012.⁸⁵³ However, because other factors likely also contribute to platform success, *e.g.*, the user experience, social features, discovery tools, etc., I adopt Valve’s [REDACTED] share of revenues as Steam’s but-for market share.

8.3.5. But-for commission rate

(377) I now have the information I need to solve for Steam’s but-for commission rate. I calculate the but-for effective commission rate to be 17.7%,⁸⁵⁴ representing a [REDACTED] decrease from the effective Steam commission rate during the period from January 28, 2017 through December

852 Note that these shares do not consider revenue for titles by Epic Games. My estimate for Steam’s market share is necessarily conservative—meaning that it is *higher* in this but-for consideration—because it excludes Epic’s position in the market.

853 Valve Transaction Data, 1/1/2008–12/31/2012. See: “02_Publisher_shares.R.”

854 [REDACTED]

31, 2022. In addition to the steps laid out above, the algebraic steps are detailed in Appendix A.2.⁸⁵⁵

- (378) The estimate of the but-for commission rate is conservative for several reasons. First, I use a conservatively high estimate for marginal costs. Steam faces high fixed costs, so its average costs are higher than its marginal costs.⁸⁵⁶ As illustrated by the Lerner Index, higher costs imply that a smaller portion of Steam’s current price is a result of its market power, leading to an artificially lower level of estimated market power. With lower estimated market power, my model shows that changes in Steam’s market share would have less of an impact on the price it charges. When considering the impact of a decrease in Steam’s market share, as I am in this case, higher costs would result in a smaller change in price, and so a higher but-for price.⁸⁵⁷ Additionally, my estimate is conservative because I hold the slope of the demand curve fixed, rather than following the Boik and Corts model which finds that Steam’s but-for quantity demanded would be more responsive to fee changes than its current demand. A more thorough analysis of this point is done in Appendix A.4.⁸⁵⁸

8.4. Pass-through rate(s)

8.4.1. Overview

- (379) Above, I present an approach for computing but-for take rates, or commission rates. Game publishers in the but-for world compete against each other in the retail market in which PC games are sold. All else equal, game publishers should ordinarily respond to a decrease in the *commission rate* by decreasing their game *price*. That would result in a lower end price for the game purchaser, thus benefiting both “sides” of the Steam platform. As a preliminary matter, I understand that for purposes of assessing class-wide impact in this case, there is no

⁸⁵⁵ The but-for effective commission rate varies slightly according to the but-for market share used. For example, if I instead use a but-for Steam market share of 50%, the but-for effective commission rate equals 20.5%.

██████. See Appendix A.2 for an explanation of the equations.

I reserve the right to calculate the but-for market share through alternative methods.

⁸⁵⁶ Attachment D-6 shows that both gross margin and operating margin are relatively flat despite changes in Steam’s commission revenue over time.

⁸⁵⁷ This intuition can be seen by rearranging the equation for the but for price from Appendix A.2 to get $P^{bf} = \frac{Q^{bf}}{Q^{rw}} P^{rw} + C' \left(1 - \frac{Q^{bf}}{Q^{rw}}\right)$. Since the quantity is decreasing, the term in front of the marginal costs is positive meaning that as costs increase, the but for price increases.

⁸⁵⁸ Appendix A.4 shows that the Boik-Corts model can place a more precise bound on the but for slope of demand that results a but for price of ██████.

need to consider the consumer “side” of the platform. Unless game publishers pass-through 100% (or more) of the commission savings, which is highly unlikely to begin with and is a proposition for which there is no evidence, game publishers will suffer *some* injury from the inflated commission rates, that is, the overcharge. Thus, the matter of pass-through is relevant only to the estimation of damages.

- (380) In this case, “pass-through” is the dollar change in price divided by the dollar change in cost. A seller’s price is determined, in part, by the costs that the seller incurs to make and/or sell the good in question. If costs change, pass-through measures how much of that cost change is passed on to the consumer as a change in price. Consider a seller of widgets, where the price set is \$10 when the cost of creating that good by the seller is \$5. If the cost of the widget decreased to \$4, a decrease in the price to \$9 would reflect a 100% pass-through rate ($\$1/\1). On the other hand, if the price did not change despite the decrease in the cost, this would represent a 0% pass-through rate ($\$0/\1). If the price decreased by \$0.50, this would represent a 50% pass-through rate ($\$0.50/\1).
- (381) Commissions such as the one imposed by Steam are akin to an *ad valorem* tax. This tax levies a fee as a percentage of the price of a product when it is sold.⁸⁵⁹ Steam’s commission rate qualifies as an *ad valorem* fee, because Steam calculates its commission rate as a *percentage* of revenue. As such, Steam’s commission rate is effectively an *ad valorem* tax on the revenues generated by developers. This echoes conclusions by researchers such as Rochet and Tirole (2003), who characterize video game platforms’ business models of extracting developers’ revenues as a tax on developers.⁸⁶⁰
- (382) Numerous studies have explored the theoretical conditions and settings that influence pass-through rates. These include, but are not limited to, the slope of the demand curve, the shape of the demand curve, the slope of the supply curve, and the degree of market competition.⁸⁶¹ Given the variety of factors that can have an impact, pass-through rates can range widely. The actual pass-through rate can further be affected by other real-world market

⁸⁵⁹ Keen, Michael (1998), “The Balance Between Specific and Ad Valorem Taxation,” *Fiscal Studies* 19(1): 1–37, at 1–2. (“There are two main ways in which commodities are generally taxed: by a *specific* (or ‘unit’) tax. . . and/or by an *ad valorem* tax, specified as a proportion of the product price and so, in effect, a tax on the value of sales.”)

⁸⁶⁰ Rochet, Jean-Charles and Jean Tirole (2003), “Platform Competition in Two-sided Markets,” *Journal of the European Economic Association* 1(4): 990–1029, at 1016. (“Although the [video game] industry’s business model involves drawing revenue from developers, platforms can only go so far in taxing the latter.”)

⁸⁶¹ Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 530–531, 551.

considerations, such as network effects, and real-world market frictions, such as menu costs, that limit price changes, despite potential changes in costs.⁸⁶²

- (383) Weyl and Fabinger (2013) outline factors that influence the pass-through of unit taxes in a variety of market settings.⁸⁶³ They show that pass-through depends on a firm’s market power, the shape of the demand curve (*i.e.*, convex or not), as well as elasticity of supply. First, they show that a higher degree of market power moves a firm more toward the monopoly case where pass-through tends to be smaller.⁸⁶⁴ Second, they show that when elasticity of supply is smaller, pass-through tends to be smaller as well.⁸⁶⁵ Third, they show that in a monopoly, when the demand curve is more convex, pass-through tends to be greater.⁸⁶⁶ Finally, the authors add that in platform markets, suppliers must weigh the potential loss of network benefits when passing through higher taxes to consumers in the form of higher prices.⁸⁶⁷ This suggests that in the presence of network effects, pass-through of higher costs to consumers is likely to be lower than that predicted by standard theoretical models.
- (384) Hackner and Herzing (2016) impose structure on demand by assuming it to be linear and theoretically derive how pass-through rates relate to key market characteristics.⁸⁶⁸ In particular, they find that pass-through of an ad valorem tax increases as the product variety/range of firms increases, as the degree of market concentration decreases, and as the degree of product differentiation decreases.⁸⁶⁹ As a smaller product range, higher market concentration, and greater product differentiation are characteristics of imperfectly competitive markets, this suggests that pass-through rates are lower in imperfectly

⁸⁶² Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 567.

⁸⁶³ Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 528.

⁸⁶⁴ Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 549.

⁸⁶⁵ Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 535.

⁸⁶⁶ Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 541.

⁸⁶⁷ Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 567.

⁸⁶⁸ Häckner, Jonas and Mathias Herzing (2016), “Welfare Effects of Taxation in Oligopolistic Markets,” *Journal of Economic Theory* 163: 141–166.

⁸⁶⁹ Häckner, Jonas and Mathias Herzing (2016), “Welfare Effects of Taxation in Oligopolistic Markets,” *Journal of Economic Theory* 163: 141–166, at 147.

competitive markets compared to perfectly competitive markets when product demand is linear.⁸⁷⁰

- (385) Overall, many factors influence pass-through, including the slope and shape of the demand curve, the slope and shape of the supply curve, and the degree of market competition.⁸⁷¹ When product markets are perfectly competitive, theory predicts that pass-through rates will be near 100%.⁸⁷² As markets become more imperfectly competitive or monopolistic, theory predicts that pass-through rates will tend to fall, especially when elasticity of supply is small and the demand curve is concave, linear, or not highly convex.⁸⁷³

8.4.2. Empirical estimate

- (386) In the economics literature, it is well documented that pass-through rates can be impacted by economic conditions such as the competitive pressures faced by firms, the presence of substitutes, and consumer demand. Other real-world effects, such as a firm's strategic desire to price at focal points—such as setting prices that end in .99—can also affect pass-through rates by reducing the number of prices a firm is willing consider when setting prices. For example, if a firm experiences a small marginal cost decrease, the firm may be unwilling to lower its prices if doing so results in a new price that is not one of the firm's focal point prices (e.g., \$5.99 to \$5.74). As focal point prices may constrain a firm's decision to pass through marginal cost savings, I first consider the evidence of focal point pricing on Steam.
- (387) I first consider the possibility that video games sold on Steam are subject to industry focal pricing points, such as \$59.99 for a triple-A game.
- (388) Figure 7 below shows the top-10 transactions prices observed on the Steam platform. The top ten sale prices are associated with █████ of revenues from the platform and █████ of transactions on the platform. Furthermore, prices ending in .99 are associated with █████ of revenues and █████ of transactions on the Steam platform. These results suggest that focal

⁸⁷⁰ Häckner, Jonas and Mathias Herzing (2016), "Welfare Effects of Taxation in Oligopolistic Markets," *Journal of Economic Theory* 163: 141–166, at 147.

⁸⁷¹ Weyl, E. Glen and Michal Fabinger (2013), "Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition," *Journal of Political Economy* 121(3): 528–583, at 530, 531, 551.

⁸⁷² Besley, Timothy J. and Harvey S. Rosen (1999), "Sales Taxes and Prices: An Empirical Analysis," *National Tax Journal* 52(2): 157–78, at 158.

⁸⁷³ Weyl, E. Glen and Michal Fabinger (2013), "Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition," *Journal of Political Economy* 121(3): 528–583, at 535, 541, 549.

point pricing is likely a consideration for a substantial number of publishers on Steam, with the most popular base prices being those one cent shy of integer dollar values.

Figure 7: Top-10 Transaction Prices on Steam⁸⁷⁴

Price (USD)	Share of Revenue	Share of Transactions
59.99	█	█
19.99	█	█
29.99	█	█
39.99	█	█
14.99	█	█
9.99	█	█
24.99	█	█
49.99	█	█
4.99	█	█
17.99	█	█
All other prices	█	█

(389) Applying this to the present case, video game publishers’ and developers’ use of focal point pricing would likely impact the pricing mechanism by which a marginal cost savings may be passed through to video game purchasers. As an illustrative example, suppose a game that has a base price of \$9.99 on Steam has historically been subject to Steam’s 30% commission rate, but eventually hits \$10 million in sales after October 1, 2018 so that the game qualifies for a drop in the applicable commission rate to 25% on subsequent sales (see Section 3.3.4). Such a drop represents a marginal cost savings of approximately \$0.50 to the game publisher. Focal point pricing *could* lead a publisher to reduce the price through promotional activities and sales as opposed to changing list prices so that the focal point price can be maintained.

⁸⁷⁴ Shares are limited to non-Valve, non-hardware transactions that are recorded in USD and took place in the US on or after January 28th, 2017. In-app purchases are not associated with native sale price fields and are excluded.

(390) Steam’s pricing data enable a reasonable estimate of pass-through.⁸⁷⁵ These data cover transactions on Steam from March 11, 2004 to December 31, 2022 and contain the following fields relevant for my analysis:

[REDACTED]

(391) [REDACTED]

⁸⁷⁷ I use these data to construct daily summaries, by package, that reflect the weighted average price of transactions on a given day using only data entries that reflect net positive transaction amounts and revenues. I exclude net return transactions from this calculation since Steam’s policy allows a user to seek a refund days after an initial transaction occurred, thus, net return transactions may reflect pricing that is no longer in effect.⁸⁷⁸

⁸⁷⁵ Valve Transaction Data., 3/11/2004–12/31/2022. See: “04_Passthrough.R.”

⁸⁷⁶ [REDACTED]

⁸⁷⁷ [REDACTED]

⁸⁷⁸ Steam, Common Refund Questions, <https://help.steampowered.com/en/faqs/view/5FDE-BA65-ACCE-A411> (accessed 12/17/2023). (“Valve will, upon request via help.steampowered.com, issue a refund for any title that is requested within 14 days of purchase and has been played for less than 2 hours (this includes online, offline and shared library playtime). Even if you fall outside of the refund rules we’ve described, you can submit a request and we’ll take a look at it.”)

- (392) The only systematic change in Steam’s commission rate I am aware of is its introduction of a tiered commission system in late 2018 (see Section 3.3.4). Accordingly, my analysis focuses on base game packages (i.e. the package associated with the game itself) that have qualified for a reduction in the applicable commission rate on Steam from 30% to 25% (i.e., base games associated with a title that has had at least \$10 million in revenue since October 1, 2018). I find that, in total, 434 games qualified for Steam’s reduced 25% commission rate.⁸⁷⁹ This change in commission rate functions as a reduction in a publisher’s marginal cost to distribute on Steam and thus is a reasonable way to assess potential pass-through by publishers. To isolate the impact from a single commission rate reduction, I exclude from the sample base games that subsequently transitioned to the 20% commission rate tier (i.e., base games associated with a title that has had at least \$50 million in revenue since October 1, 2018).⁸⁸⁰
- (393) To account for the use of publisher focal point pricing and discounting as a possible pass-through mechanism (as described above), my analysis focuses on effective price changes over an extended period of time. Specifically, using the daily weighted average transaction prices described above, I calculate the average effective daily price over the 360 days preceding the commission rate reduction and the first 360 days following the commission rate reduction. I remove base games from the sample that have revenues beginning less than 360 days before the commission change or revenues ending greater than 360 days after the commission change. I also remove base games from the sample that have pricing/transaction data available for less than 50% of the days in the 720-day window around the commission rate change. Note that my analysis also excludes titles that may have reached the 25% commission rate tier soon after launch (i.e., in less than 360 days).
- (394) There are 124 base game packages that meet the above criteria.⁸⁸¹ For each base game package, I use the 360-day average daily price after the commission rate change to calculate the percentage price decrease from the 360-day average daily price prior to the commission rate change.⁸⁸² Using the full sample, the average effective price reduction was [REDACTED] and the

⁸⁷⁹ Valve Transaction Data, 3/11/2004–12/31/2022. See: “04_Passthrough.R.”

This excludes titles published by Valve.

⁸⁸⁰ [REDACTED] games from publishers other than Valve transitioned to the 20% commission tier rate in Valve’s transaction data.

Valve Transaction Data, 3/11/2004–12/31/2022. See: “04_Passthrough.R.”

⁸⁸¹ Valve Transaction Data, 3/11/2004–12/31/2022. See: “04_Passthrough.R.”

⁸⁸² In the event that the average effective daily price increased after the commission rate change, this would be reflected by a negative percent (i.e., a negative decrease).

median effective price reduction was [REDACTED].⁸⁸³ Here, I use the median as a sample statistic since it is less susceptible to extreme outlier influence.

- (395) To examine the potential impact of outliers, I recalculate the average and median price reductions excluding games from the sample where the magnitude of the percentage price reduction is at least 10% in absolute value (*i.e.*, less than or equal to -10% or greater than or equal to 10%). I then repeat this process using threshold values of 15%, 20%, 25%, and 30%, calculating the average and median price reductions in each instance. The results are shown in Figure 8 below.⁸⁸⁴

Figure 8: Average and Median Price Changes



- (396) As can be seen above, the median value exhibits less volatility than the average value across samples. Thus, the use of the median values is appropriate and reasonable given the potential impact of price change outliers on the average values. The median price change values in the samples above range from [REDACTED], implying pass-through rates of approximately 20% to 25%.

⁸⁸³ Valve Transaction Data, 3/11/2004–12/31/2022. See: "04_Passthrough.R."

⁸⁸⁴ Valve Transaction Data, 3/11/2004–12/31/2022. See: "04_Passthrough.R."

(397) The pass-through rate of 20% to 25% on the but-for commission rate would imply an approximately [REDACTED] consumer price reduction.⁸⁸⁵ The models I use to estimate these values are agnostic to the process by which one would get to this average value over time. In the but-for world, Valve would face increased competition. Therefore, to consider the but-for world, one must trace out a world in which competing platforms would have offered developers lower commission rates, and developers would have passed some portion of those savings on to consumers. This would have started long ago, when Steam did not enjoy the network effects or any first-mover advantage. Thus, it is not appropriate to consider whether this change in prices would cause users *now* to switch platforms. Rather, it is more appropriate to consider whether Steam users in the but-for world would have switched earlier on in the growth of the relevant market, and whether new PC gamers would have started on a lower-cost platform rather than join Steam.

8.5. Overcharge and damages

(398) The total overcharge imposed on game publishers by Steam is different than class-wide damages in this matter. Total overcharge refers to all commissions taken by Valve in excess of a competitive commission rate. Some publishers who are not part of the putative class may be included in a calculation of total overcharge, *e.g.*, foreign publishers who sold only to foreign customers.

(399) To estimate class-wide damages in this matter, I include all transactions occurring on Steam, except that I exclude transactions for foreign publishers who *only* transacted with foreign consumers. That is, if a publisher based in Canada had any sales recorded with U.S. customers, all revenue associated with that publisher would be included. However, if another Canadian publisher *only* had charge volume within Canada, that publisher and its related sales would be excluded. For U.S. publishers, all global sales are considered. There are [REDACTED] publishers meeting these criteria that also have positive net revenue over the damages period in Valve's transaction data.⁸⁸⁶ Given the scope of this litigation, I limit my estimate of aggregate class-wide damages to transactions involving games, DLC, or in-app purchases.⁸⁸⁷

⁸⁸⁵ Calculated as:

[REDACTED]
[REDACTED]

⁸⁸⁶ Valve Transaction Data, 1/28/2017–12/31/23. See "05_Damages.R."

⁸⁸⁷ Sales associated with hardware products, undetermined product types, or Valve as a publisher are excluded from this aggregation.

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8.5.1. Overcharge and damages are calculated formulaically to estimate individual putative class member damages

- (400) To estimate the damages associated with an individual putative class member, I apply a consistent methodology to all putative class members. I begin with a given publisher’s dollar transaction volume (*i.e.*, revenues) between January 28, 2017 and December 31, 2022 on the Steam platform as recorded in Steam’s transaction data. Because Valve has not yet produced data for 2023, I estimate 2023 revenues by assuming they are equal to those in 2022. My methodology is replicable and can be expanded to address later years when Valve produces additional transaction records in later stages of this litigation. This assumption is likely conservative, as the [REDACTED]. See Attachment D-5.
- (401) To determine the overcharge associated with a given commission rate, I scale the commission rates calculated in the transaction data by a ratio of the but-for commission rate to the overall effective commission rate in the damages period.⁸⁸⁸ The effective commission rate from Valve’s transaction data is [REDACTED].⁸⁸⁹ The but-for commission rate I calculate above is 17.7% (see Section 8.3.5). Next, I multiply commissions paid to Valve by [REDACTED] to arrive at a but-for commission for a given commission rate.⁸⁹⁰ Finally, to determine overcharge at a given commission rate, I subtract the scaled but-for commission rate from the calculated commission rates. This is equivalent to calculating the overcharge as 33.2% of the commissions paid.
- (402) To calculate Valve’s overcharge for an individual publisher, I begin by calculating the percent overcharge for that publisher. I then apply that percent overcharge to the actual associated revenues. For instance, if a publisher faced a 30% commission rate for \$10 million sales and

⁸⁸⁸ The calculations presented in this section use rounded values, though I use more precise values in my attachments. Thus, they may differ slightly.

⁸⁸⁹ Valve Transaction Data, 1/28/2017–12/31/2022. See: “05_Damages.R.”

A small share of revenue is associated with outlier calculated commission rates due to the timing of recorded partner payments or rounding error from small transactions. To be conservative, I calculate the above effective rate using the top 15 calculated commission rates between January, 28 2017 and December 31, 2022, which account for [REDACTED] of revenue in Valve’s transaction data over this time. The effective rate for all calculated commission rates associated with positive revenue is modestly higher, at [REDACTED].

⁸⁹⁰ Valve Transaction Data, 1/28/2017–12/31/2022. See: “05_Damages.R.”

For nearly all revenue in the transaction data, this ratio is applied to the exact rate calculated using partner payment information available in Valve’s transaction data. This includes commission rates between [REDACTED] and [REDACTED], as well as commission calculated as [REDACTED] and [REDACTED]. For the small share of revenue associated with outlier commission rates, rates below [REDACTED] are floored at [REDACTED], and remaining rates are replaced with the effective commission rate from the overall damages period. Rates within [REDACTED] of [REDACTED] and [REDACTED] are set at [REDACTED] and [REDACTED], respectively.

a 25% commission rate for \$20 million in sales, the overcharge would be [REDACTED], respectively.⁸⁹¹ Damages for a publisher in this matter are not equal to the entire amount of overcharge associated with each of their titles. In Section 8.4.2 above, I describe the concept of pass-through and estimate that publishers would pass between 20% and 25% of savings to consumers. The remaining portion of the overcharge by Valve, between 75% and 80%, reflects the actual harm to publishers.⁸⁹²

- (403) Below, I present a formula for computing the putative class members’ overcharges by Valve. The publishers’ overcharge is equal to the following equation, where i indicates publisher and j indicates product sold:

$$\text{Overcharge} = \sum_{i,j} \text{Revenue}_{i,j} \times (\text{Actual Commission Rate}_{i,j} - \text{But-For Commission Rate}_{i,j})$$

- (404) The total overcharge for the entire putative class is the sum of each member’s individualized overcharges, which reflect their sales volume for specific product offerings. Consequently, publishers with low sales volume are associated with low overcharge estimates. Commission rates can vary among the titles offered by an individual publisher based on Steam’s actual commission structure; this calculation necessarily considers an actual and but-for rate for each product sold.
- (405) Note that this overcharge calculation, and thus the associated damages calculation, is conservative, as it only accounts for the lower commission rate. This calculation does not consider the change in quantity of sales as a result of the lower commission rate (and resulting lower consumer price). As discussed in Section 4.2.2, the supracompetitive Steam commission fee is passed through to consumers in higher game prices, reducing the volume of purchases made. With a lower commission rate, and thus lower game prices to consumers, publishers would be able to sell more games, increasing revenues through higher volume in addition to savings on costs.

891 [REDACTED]

892 Note that I round these estimates here for simplicity. I use exact and unrounded results from my passthrough analysis in all calculations below. See: "04.Passthrough.R" and "05_Damages.R".

8.5.2. Estimation of overcharge

Sample calculation for Dark Catt

- (406) Dark Catt generated ██████ in global revenue for its games since January 28, 2017, with a 30% commission rate to Valve over the same time period.⁸⁹³ Using the calculation above, I calculate ██████ in overcharge associated with its sales on Steam.⁸⁹⁴ Because Dark Catt is a US-based publisher, I only calculate one global value.

Sample calculation for Wolfire

- (407) Wolfire Games generated \$2.1 million between January 28, 2017 and December 31, 2022.⁸⁹⁵ Assuming 2023 revenues are equal to those in 2022, I estimate that Wolfire Games, a US-based publisher, generated \$2.4 million in global revenues for its games between January 28, 2017 and December 31, 2023, with a 30% commission rate to Valve over the same time period.⁸⁹⁶ Using the calculation above, I calculate ██████ in overcharge associated with its sales on Steam.⁸⁹⁷ Because Wolfire is a US-based publisher, I only calculate one global value.

Sample calculation for all publishers

- (408) Between January 28, 2017 and December 31, 2022, I calculate that sales involving a U.S. publisher or foreign publisher with any US sales generated ██████ in app sales and ██████ of in-app revenue.⁸⁹⁸ Assuming 2023 revenues are equal to those in 2022, I estimate an additional ██████ and ██████ in app sale and in-app revenues, respectively. At the varying individual commission rates determined using Valve's transaction data, I calculate that the overcharge associated with these sales total to ██████ and ██████, respectively.⁸⁹⁹

⁸⁹³ Attachment G-6. Dark Catt did not generate revenue in 2023. See: "05_Damages.R"

⁸⁹⁴ Attachment G-6.

⁸⁹⁵ Attachment G-6.

⁸⁹⁶ Attachment G-6.

⁸⁹⁷ Attachment G-6.

⁸⁹⁸ Valve Transaction Data, 1/28/2017–12/31/2022. See: "05_Damages.R."

Over the damages period, approximately ██████ of revenue was generated by packages that cannot be mapped to a valid AppID using tables provided by Valve. I exclude this revenue from my overcharge calculations to be conservative.

Attachment G-5.

⁸⁹⁹ Attachment G-5.

(409) I also calculate overcharge for all global transactions. From January 28, 2017 through December 31, 2022, publishers on Steam generated [REDACTED] in app sales and [REDACTED] of in-app revenue globally.⁹⁰⁰ Assuming revenues 2023 revenues are equal to those in 2022, I estimate an additional [REDACTED] and [REDACTED] in app sale and in-app revenues, respectively.⁹⁰¹ At the varying individual commission rates determined using Valve's transaction data, I calculate that the overcharge associated with these sales total to [REDACTED] and [REDACTED] respectively.⁹⁰²

8.5.3. Estimation of damages

(410) For Dark Catt, I estimate damages to be between [REDACTED].⁹⁰³ Similarly, for Wolfire Games, I estimate damages to be between [REDACTED].⁹⁰⁴ For all publishers who are either based in the U.S. or have any sales with U.S. customers, I estimate damages to be between \$2.9 billion and \$3.1 billion.⁹⁰⁵ See Figure 9 below.

⁹⁰⁰ Attachment G-5.

⁹⁰¹ Attachment G-5.

⁹⁰² Attachment G-5.

⁹⁰³ Attachment G-7.

⁹⁰⁴ Attachment G-7.

⁹⁰⁵ Attachment G-7.

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**Figure 9: Estimated Damages for All Relevant Publishers
and Named Plaintiffs (1/28/2017–12/31/2023)⁹⁰⁶**

Publisher	Passthrough rate	Estimated Damages (Package Sales)	Estimated Damages (In-App Sales)	Estimated Damages (Total)
US-based or Foreign with Any US Sales	25%	██████████	██████████	██████████
	20%	██████████	██████████	██████████
Dark Catt Studios Holdings, Inc.	25%	██	██	██
	20%	██	██	██
Wolfire Games	25%	██████████	██	██████████
	20%	██████████	██	██████████

⁹⁰⁶ Attachment G-7.

Note that results are rounded to the nearest dollar, and columns may not sum exactly.

A. Economic Theory Appendix

A.1. Boik and Corts analysis details

A.1.1. Introduction and overview

- (A1) In the body of the report, I calibrate the model to case-specific parameters. The model uses demand and cost parameters¹ $a, b, d, x, c_1, c_2, c_s$ to determine prices, fees, and quantities with and without a PMFN on both platforms.² I determine a set of model parameters $a, b, d, x, c_1, c_2, c_s$ that correspond to the case specific values for³ $p_1^2, p_2^2, q_1^2, q_2^2, f_1^2, f_2^2, c_1, c_2$. I use the equations for my known values to solve algebraically for the unknown model parameters. In doing this, I show that the values for $p_1^2, p_2^2, q_1^2, q_2^2, f_1^2, f_2^2, c_1$ identify a unique set of model parameters a, b, d, x, c_2, c_s .
- (A2) While this solution may suffice for some cases, as I discuss below, the case specific estimates give model parameters that imply seller profits are negative on Steam. This means that Steam's profit maximization problem is not correct, since it is based on the assumption that sellers will sell on the platform; however, with negative economic profits, sellers would stop selling on Steam and instead pursue their next best alternative. This results in what is known as a "corner solution." Rather than maximize their profits by setting marginal revenue equal to marginal costs, Steam would need to set its price at the highest level that still keeps the seller in the market. That is, they set their price at the point where the seller is just indifferent between selling on Steam and pursuing their next best alternative. I use the computer program R to calibrate the corner solution to the real-world estimates.

¹ a is the intercept in the demand for games. b is the coefficient on the price of a platform's own games while d is the coefficient for the price on the other platform's games. x is a demand parameter setting the difference in demand between Steam and EGS. c_1, c_2, c_s are constant marginal and average costs for Steam, ESG and the game developer respectively.

² For the full list of equations identified by the asymmetric Boik-Corts model, see:

Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 133–134.

³ $p_1^2, p_2^2, q_1^2, q_2^2, f_1^2, f_2^2, c_1, c_2$. Are prices, quantities, and fees with the PMFN in place for Steam and ESG respectably, and constant marginal and average costs for Steam and ESG.

A.1.2. Interior solution

(A3) To start we can invert the equations from the Boik and Corts model to provide model parameters that match specific observable outputs $p_1^2, p_2^2, q_1^2, q_2^2, f_1^2, f_2^2, c_1$ for interior solutions of the model.

Solving the calibrated model (interior)

(A4) First, I use the two demand functions $q_1^2(\mathbf{P})$ and $q_2^2(\mathbf{P})$. I subtract the two equations to get x in terms of the known values $p_1^2, p_2^2, q_1^2, q_2^2$ as well as b, d . When a PMFN is in place, it is required that $p_1^2 = p_2^2$, which allows for the b, d values to be eliminated from the equation giving the following.

$$q_1^2(\mathbf{P}) = a - p_1^2 b + p_2^2 d$$

$$q_2^2(\mathbf{P}) = a - x - p_2^2 b + p_1^2 d$$

$$q_1^2(\mathbf{P}) - q_2^2(\mathbf{P}) = x + b(p_2^2 - p_1^2) + d(p_2^2 - p_1^2)$$

$$\Rightarrow q_1^2(\mathbf{P}) - q_2^2(\mathbf{P}) = x$$

(A5) Next, I use the implicit demand function $q_1^2(f)$, the standard demand function $q_1^2(\mathbf{P})$, and the equations for the optimal f_1^{2*} and f_2^{2*} from the asymmetric Boik-Corts model to determine values for $(b - d)$, a , c_s , c_2 .⁴ With four equations I can determine these four unknown variables, but not b and d separately. These equations are the following.

$$(b - d) = \frac{-12q_1^2}{3(c_1 - f_1^2)}$$

$$a = q_1^2 + p_1^2(b - d)$$

$$c_s = \frac{x + 2a - (b - d)(f_1^2 + f_2^2) - 4q_1^2}{2(b - d)}$$

$$c_2 = \frac{3f_2^2(b - d) + 7x - 2a}{2(b - d)} + \frac{1}{2}c_1 + c_s$$

⁴ Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 133–134.

(A6) To derive these equations, I first use the demand function $q_1^2(P)$ to get an equation for a .⁵

$$a = q_1^2 + p_1^2(b - d)$$

(A7) Next, I can derive an equation for c_s by rearranging the implicit demand function $q_1^2(f)$.

$$q_1^2 = \frac{1}{4} [2a + 2dc_s + d((f_1^2 + f_2^2)) - b(2c_s + f_1 + f_2) + x]$$

$$\Rightarrow 4q_1^2 - x - 2a + (b - d)((f_1^2 + f_2^2)) = -2c_s(b - d)$$

$$\Rightarrow c_s = \frac{x + 2a - (b - d)(f_1^2 + f_2^2) - 4q_1^2}{2(b - d)}$$

(A8) By rearranging the equations for f_1^2 and f_2^2 , I get the following pair of equations for c_2 . First:

$$f_2^2 = \frac{2a + (b - d)(2c_1 - c_2 - 2c_s) + 5x}{3(b - d)}$$

$$\Rightarrow c_2 = 2(c_1 - c_s) - \frac{3f_1^2(b - d) - 5x - 2a}{b - d}$$

$$f_2^2 = \frac{2a + (b - d)(2c_2 - c_1 - 2c_s) - 7x}{3(b - d)}$$

$$\Rightarrow c_2 = \frac{3f_2^2(b - d) + 7x - 2a}{2(b - d)} + \frac{1}{2}c_1 + c_s$$

(A9) Now the two c_2 equations can be set equal to one another to eliminate c_2 from the equation and solve for c_s in terms of $(b - d)$.

$$\frac{3f_2^2(b - d) + 7x - 2a}{2(b - d)} + \frac{1}{2}c_1 + c_s = 2(c_1 - c_s) - \frac{3f_1^2(b - d) - 5x - 2a}{b - d}$$

$$\Rightarrow \frac{3f_2^2(b - d) + 7x - 2a}{2(b - d)} - \frac{3}{2}c_1 + \frac{3f_1^2(b - d) - 5x - 2a}{b - d} = -3c_s$$

$$\Rightarrow c_s = \frac{1}{2}c_1 - \frac{3f_2^2(b - d) + 7x - 2a}{6(b - d)} - \frac{3f_1^2(b - d) - 5x - 2a}{3(b - d)}$$

⁵ I use that $p_1^2 = p_2^2$. The PMFN forces these prices to be equal.

(A10) Next, I set this equation for c_s equal to the previous equation for c_s above to get an equation for $(b - d)$ using only my known values identified above.

$$\frac{1}{2}c_1 - \frac{3f_2^2(b-d) + 7x - 2a}{6(b-d)} - \frac{3f_1^2(b-d) - 5x - 2a}{3(b-d)} = \frac{x + 2a - (b-d)(f_1^2 + f_2^2) - 4q_1^2}{2(b-d)}$$

(A11) Multiply both sides by $6(b - d)$ to get:

$$\Rightarrow 3c_1(b-d) - 3f_2^2(b-d) - 7x + 2a - 6f_1^2(b-d) + 10x + 4a = 3x + 6a - 3(b-d)(f_1^2 + f_2^2) - 12q_1^2$$

$$\Rightarrow (b-d)(3c_1 - 3f_1^2) = -12q_1^2$$

$$\Rightarrow (b-d) = \frac{-12q_1^2}{3(c_1 - f_1^2)}$$

(A12) Now that I have a value for $(b - d)$ I can use my equation for a above to solve for a .

$$a = q_1^2 + p_i^2(b-d)$$

(A13) With $(b - d)$ and a I can now plug in all the values from my equation for c_s above.

$$c_s = \frac{x + 2a - (b-d)(f_1^2 + f_2^2) - 4q_1^2}{2(b-d)}$$

(A14) Finally, plugging all of these values into either equation for c_2 will give c_2 .

$$c_2 = \frac{3f_2^2(b-d) + 7x - 2a}{2(b-d)} + \frac{1}{2}c_1 + c_s$$

(A15) The final step is to identify b individually from the $b - d$ value above. However, as I show below, any value for b will result in negative seller profits across both platforms with the PMFN in place. The seller profits are a function of the prices and quantities with the PMFN (which I am fixing at the real values), and the seller costs. As I show above, the seller costs are a function of the prices and quantities with the PMFN and firm 1's costs, which again are fixed to real world values. So, the seller's total profits are fixed by the real-world values. This is shown below by plugging the corresponding equations for c_s , a , and $(b - d)$ from above into the seller profit functions.

$$\begin{aligned} \Pi_{s1}^2 &= (p_i^2 - f_1^2 - c_s)(q_1^2) \\ &= \left(p_i^2 - f_1^2 - \frac{x + 2a - (b-d)(f_1^2 + f_2^2) - 4q_1^2}{2(b-d)} \right) (q_1^2) \end{aligned}$$

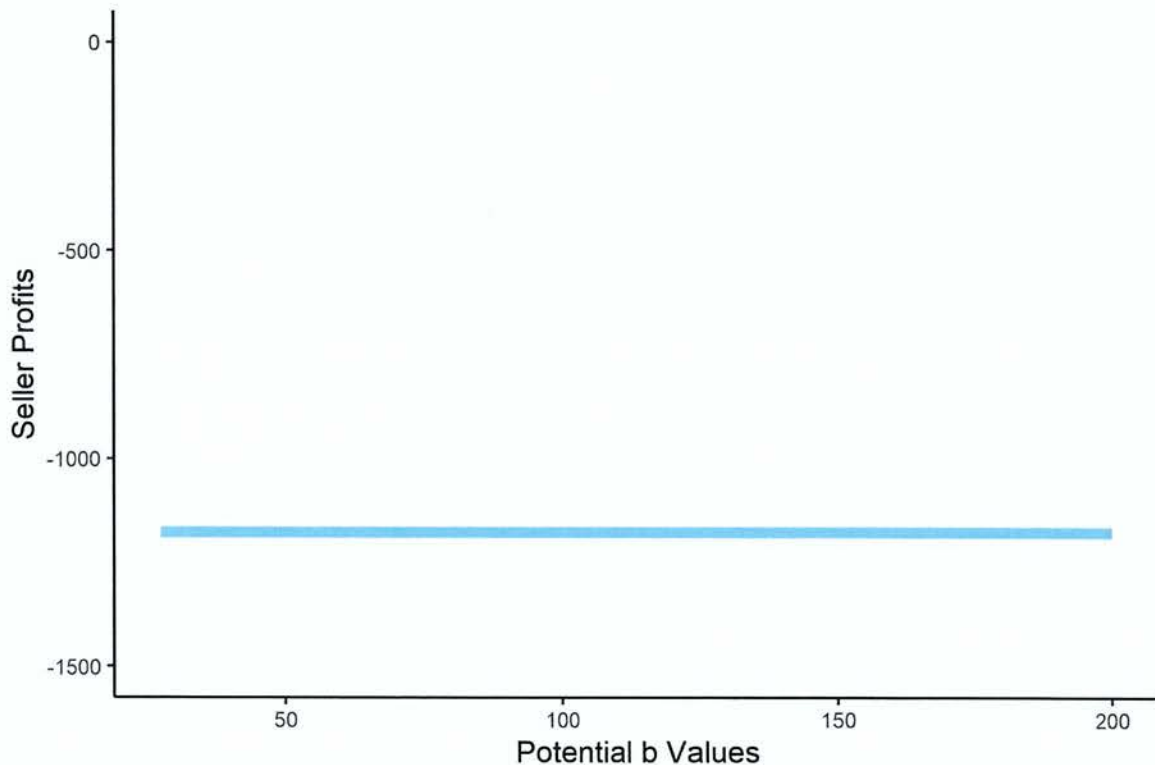
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$$= \left(p_i^2 - f_1^2 - \frac{x + 2(q_1^2 + p_i^2 \left(\frac{-12q_1^2}{3(c_1 - f_1^2)} \right)) - \left(\frac{-12q_1^2}{3(c_1 - f_1^2)} \right) (f_1^2 + f_2^2) - 4q_1^2}{2 \left(\frac{-12q_1^2}{3(c_1 - f_1^2)} \right)} \right) (q_1^2)$$

$$\Pi_{s2}^2 = \left(p_i^2 - f_2^2 - \frac{x + 2(q_1^2 + p_i^2 \left(\frac{-12q_1^2}{3(c_1 - f_1^2)} \right)) - \left(\frac{-12q_1^2}{3(c_1 - f_1^2)} \right) (f_1^2 + f_2^2) - 4q_1^2}{2 \left(\frac{-12q_1^2}{3(c_1 - f_1^2)} \right)} \right) (q_2^2)$$

(A16) To further illustrate this point, I show the calculated seller profits for a range of b values.⁶

Figure A.1: Interior Solution Seller Profits



(A17) As the figure shows, the combined seller economic profits on both platforms when the PMFN is in place are negative. This indicates that sellers with these costs facing these prices and

⁶ See 09a_interior.R

fees would choose not to sell at all over operating in this market. The model can be adjusted to reflect how Steam and the seller would adjust their behavior in this situation.

A.1.3. Corner solution

(A18) In the above scenario, sellers would exit the market or sell just on EGS. To avoid this, Steam would lower their fees until sellers are just indifferent between selling on Steam and their next best option. What their next best option is depends on the demand parameters of the model. One option the seller has is to exit the market entirely and pursue their next best option, earning zero economic profits (the definition of zero economic profits is the profits at the firm's next best option). The second option is to avoid the PMFN by selling only to EGS. This may seem like an attractive option; however, it would mean the seller sells to the other platform as a (now) monopolist. This option would give them whatever economic profits they can acquire with the competing firm's demand curve and the competing firm acting as a monopolist. I denote these profits Π_s^m .

(A19) To find the solution, then, Steam lowers their fee until the seller's total economic profits across both platforms are equal to Π_s^m . To do this, we must first determine Π_s^m .

Monopoly profits

(A20) As discussed in appendix B of the Boik and Corts paper, the model is somewhat ambiguous as to what demand would look like with only one firm.⁷ To solve this problem, I consider a range of potential demand equations for game sales on the competing platform, EGS, if the seller chose to sell only on EGS. The demand for games on EGS in this case demand takes the following form where m denotes the monopoly outcome and A and M are constants.

$$\Rightarrow q_2^m = A - Mp_2^m$$

(A21) And this gives the seller profits of

$$\Pi_s^m = (p_2^m - f_2^m - c_s)(A - Mp_2^m)$$

(A22) Take the first order condition with respect to the seller's price and setting it equal to zero gives the following.

⁷ Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 131–132.

$$\frac{\partial \Pi_s^m}{\partial p} = A - 2Mp_2^m + f_2^m M + c_s M = 0$$

$$\Rightarrow A + f_2^m M + c_s M = 2Mp_2^m$$

$$\Rightarrow \frac{A}{2M} + \frac{f_2^m}{2} + \frac{c_s}{2} = p_2^{m*}$$

- (A23) This is the seller’s optimal price if they only sold games through EGS. Now plugging this into the platform’s profit condition and maximizing with respect to the fee gives the optimal EGS monopoly fee.

$$\Pi_2^m = (f_2^m - c_2) \left(A - M \left(\frac{A}{2M} + \frac{f_2^m}{2} + \frac{c_s}{2} \right) \right)$$

$$\frac{\partial \Pi_2^m}{\partial f_2^m} = \frac{A}{2} - Mf_2^m - \frac{1}{2}Mc_s + \frac{1}{2}c_2M = 0$$

$$\Rightarrow f_2^{m*} = \frac{1}{2}(c_2 - c_s) + \frac{A}{2M}$$

- (A24) Note that these solutions only work if it’s possible to earn a profit. If the sum of the costs are not below the choke price, $c_s + c_2 < \frac{A}{M}$, the seller and platform cannot price high enough to cover their costs. So, in this case, the seller cannot sell to the second platform as a monopolist and their next best option is to exit the market. This inequality comes from two limits to the monopoly price. The price cannot be above A/M as this would push the market quantity below zero (one can see this by plugging A/M into the monopoly demand curve above). Alternatively, if the price is below $c_2 + c_s$ the seller and the platform cannot collectively cover their costs. So, if $c_2 + c_s > \frac{A}{M}$ then the lowest possible price is above the highest possible price and there is no working monopoly price. In this case, the seller’s only option outside abiding by Steam’s PMFN is to exit the market and earn zero economic profits.

- (A25) To determine a range for the competing platform’s demand in the event they are the only seller, I consider two different approaches. First, I assume the competitor platform would capture the maximum amount of demand from Steam, and I set the price of the firm that exited the market (in this case Steam) to a level such that their demand is equal to zero. A price so high no one would choose to purchase on Steam is effectively the same as Steam not being available. This provides a reasonable upper bound on demand. That is, I set:

$$p_1^m = \frac{a + dp_2^m}{b}$$

(A26) Now this gives the following equation for demand on platform 2.

$$q_2^m = a - bp_2^m + d \left(\frac{a + dp_2^m}{b} \right) - x$$

$$\Rightarrow q_2^m = a + \frac{da}{b} - x - \left(b - \frac{d^2}{b} \right) p_2^m$$

(A27) With:

$$A = a + \frac{da}{b} - x$$

$$M = \left(b - \frac{d^2}{b} \right)$$

(A28) Alternatively, I can assume that the seller exiting Steam would be equivalent to Steam setting their price to zero (the lowest possible price). This provides a reasonable lower range estimate of the monopolist platform’s demand.

$$q_2^m = a - x - bp_2^m$$

$$A = a - x$$

$$M = b$$

Corner solution derivation

(A29) To derive the corner solution, I use the nloptr function from the nloptr package in the statistical program R (version 4.3.1).⁸ Overall, a solution is found by minimizing the sum of the squared difference between the results generated from a given set of model parameters, $a, b, d, x, c_1, c_2, c_s$, and the real world values $p_1^2, p_2^2, q_1^2, q_2^2, f_1^2, f_2^2, c_1, c_2$. To generate a set of results for a given set of model parameters, the following process is used.

⁸ See the files, 00_BC_header.R, 09c_corner_hd.R, 09c_corner_ld.R.

(A30) First, I check the interior solution outlined above. Then, I check if the seller would actually continue to sell on Steam with the given interior solution, i.e., is the seller earning more profits across both platforms than Π_s^m ? If not, I calculate the corner solution. For the corner solution, I again use the nloptr function to search for the optimal Steam fee such that seller profits across both platforms are just equal to Π_s^m . To do this, the program searches over Steam fee values f_1^2 and computes the competitor’s fee f_2^2 using EGS’s best response function (which determines their optimal fee given Steam’s fee). ESG’s best response function can be found by maximizing their profit function taking Steam’s fee as given (as it will be given in the search algorithm).

$$\begin{aligned}\Pi_2^2 &= (f_2^2 - c_2)(a - (b - d)p_t^2 - x) \\ &= (f_2^2 - c_2)\left(a - (b - d)\frac{2a + (b - d)(2c_s + f_1^2 + f_2^2) - x}{4(b - d)} - x\right) \\ &= (f_2^2 - c_2)\left(\frac{1}{2}a - \frac{1}{4}(b - d)(2c_s + f_1^2 + f_2^2) - \frac{3}{4}x\right) \\ \Rightarrow \frac{\partial \Pi_2^2}{\partial f_2^2} &= \frac{1}{2}a - \frac{1}{4}(b - d)(2c_s + f_1^2 + 2f_2^2) - \frac{3}{4}x + c_2\frac{1}{4}(b - d) = 0 \\ \Rightarrow f_2^{2BR} &= \frac{a}{b - d} - c_s - \frac{1}{2}f_1^2 - \frac{3x}{2(b - d)} + \frac{1}{2}c_2\end{aligned}$$

(A31) Using the values of f_1^2 and f_2^2 that satisfy this corner solution condition, I update the values for the prices and quantities in the PMFN case by using the equations from the Boik and Corts paper for the prices and quantities that are determined by the seller’s optimal pricing problem.⁹ To summarize, this process gives model outputs that satisfy the corner solution condition, that is, the seller is willing to stay in the market and sell on both platforms, for a given set of inputs. The nloptr function uses this process to search over model parameters until the sum of the squared difference between the real-world values and the values of the model produced are minimized.

Results

(A32) Below are the results from the low and high demand assumptions respectively.

⁹ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 133–134.

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Table A.1: Low ESG Monopoly Demand Results

Metric	With PMFN		Without PMFN	
	Steam	EGS	Steam	EGS
Fee	████	████	████	████
Fee %	████	████	████	████
Price	████	████	████	████
Quantity (units, millions)	████	████	████	████
Share	████	████	████	████
Platform economic profits (millions)	████	████	████	████
Seller economic profits (millions)	████	████	████	████
Seller profits per unit	████	████	████	████
Weighted price across all games		██		██
Weighted fee across all games		██		██
Weighted commission across all games		██		██

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Table A.2: High ESG Monopoly Demand Results

Metric	With PMFN		Without PMFN	
	Steam	EGS	Steam	EGS
Fee	████	████	████	████
Fee %	████	████	████	████
Price	████	████	████	████
Quantity (units, millions)	████	████	████	████
Share	████	████	████	████
Platform economic profits (millions)	████████	████████	████████	████████
Seller economic profits (millions)	████████	████████	████████	████████
Seller profits per unit	████	████	████	████
Weighted price across all games		████		████
Weighted fee across all games		████		████
Weighted commission across all games		████		████

(A33) The parameters corresponding to these results are the following.¹⁰

Table A.3: Low ESG Monopoly Demand Model Inputs

a	b	d	c1	c2	cs	x
████	████	████	████	████	████	████

Table A.4: High ESG Monopoly Demand Model Inputs

a	b	d	c1	c2	cs	x
████	████	████	████	████	████	████

(A34) In both cases, developers are harmed by the PMFN. The PMFN allows Steam to raise their commission while simultaneously increasing their market share by forcing developers to price

¹⁰ Note that the model is calibrated with $p_i^2 = 1$ and $q_1^2 + q_2^2 = 1$ for better performance. The results from these parameters can be scaled according to the real-world units as seen in 10_BC_tables.R.

evenly across platforms. Note that the second, “High ESG Monopoly Demand Model” is not able to fit the facts of the case as well. The prices, fees, and quantities are further from the real-world values. Additionally, it assumes the seller would see a large boost in demand at EGS should the seller remove their game from Steam. I have no reason to think this is reflective of the typical seller experience. As such, I present the “Low ESG Monopoly Demand Model” in the report.

A.2. Analytic approach algebraic details

(A35) To come to a but-for price, I rely on real-world values for platform fees, costs, and market share; a calculation of the but-for market share; and conclusions drawn from the Landes and Posner model (which are reinforced by the Boik-Corts model). As before, I assume Steam’s firm demand is linear. Figure 1 illustrates Steam’s firm demand in the real world and indicates the but-for quantity. Steam’s but-for demand must shift such that Steam’s profit maximizing optimal equilibrium point is at the but-for quantity. In other words, the new curve must shift such that the but-for price and but-for quantity satisfy the Lerner Index.¹¹ In addition, I conservatively assume that the slope of the demand curve remains constant. Figure 2 illustrates the change, and the following section walks through the calculations that determine the exact values.

¹¹ It is equivalent to think of this in terms of either the profit maximization point or the satisfaction of the Lerner Index because the Lerner Index is derived from the profit maximization condition. A firm’s profit-maximizing price is established when the firm sets its marginal revenue equal to marginal cost. See:

Landes, William M. and Richard A. Posner (1981), “Market Power in Antitrust Cases,” *Harvard Law Review* 94(5): 937–996, at 984–986.

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Figure A.2: Steam Demand and But-For Quantity

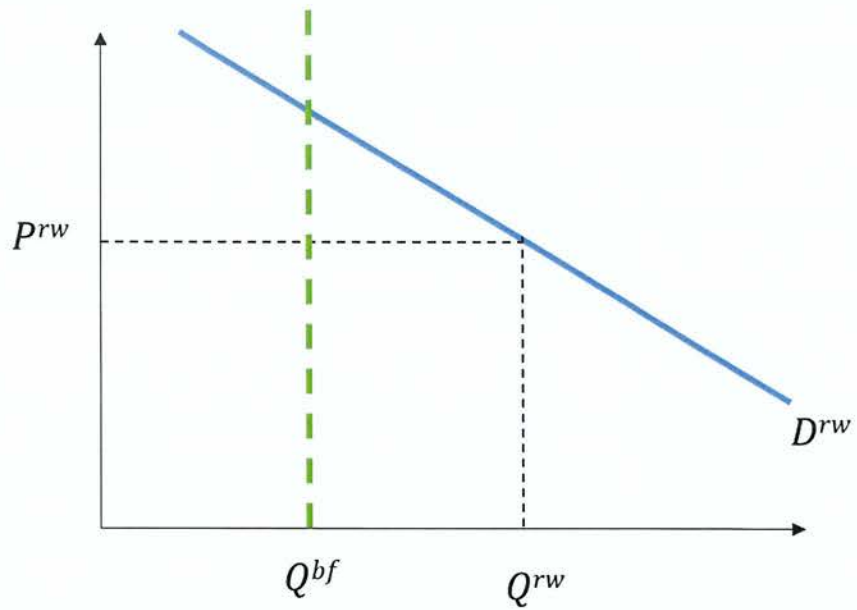
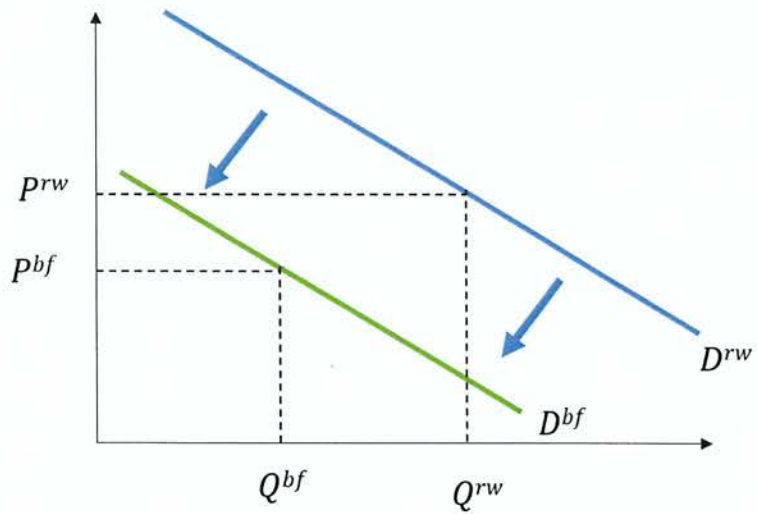


Figure A.3: Steam Demand and But-For Quantity



(A36) Steam’s real-world price, quantity, marginal costs and but-for quantities P^{rw} , Q^{rw} , C' , Q^{bf} are all known or bounded as described in Section 8.3. Using these known values, I am able to determine an upper bound of Steam’s but-for markup (thus, price). As I will show below, this but for markup is determined by the following equation.

$$(P^{bf} - C') = \frac{Q^{bf}}{Q^{rw}} (P^{rw} - C')$$

(A37) First, recall that the but-for price must satisfy the Lerner Index. The Lerner Index equals the inverse of the but-for elasticity, which is a function of the but-for price and quantity:

$$\frac{(P^{bf} - C')}{P^{bf}} = \frac{1}{\epsilon_i^d(P^{bf}, Q^{bf})}$$

(A38) Demand elasticity is defined as the following:

$$\epsilon_m^d = -\frac{P}{Q} \frac{\partial Q}{\partial P}$$

(A39) As discussed in 8.3.2, I assume that demand is linear, which implies that $-\frac{\partial Q}{\partial P} = m$, where m is a constant. Substituting this into the equation for demand elasticity gives the following:

$$\epsilon_i^d(P, Q) = m \frac{P}{Q}$$

(A40) Next, substituting the above equation for elasticity into the but-for Lerner Index results in the following:

$$\frac{(P^{bf} - C')}{P^{bf}} = \frac{1}{\epsilon_i^d(P^{bf}, Q^{bf})} = \frac{1}{m \frac{P^{bf}}{Q^{bf}}}$$

(A41) This is rearranged and simplified to the following:

$$(P^{bf} - C') = \frac{Q^{bf}}{m}$$

(A42) This resulting equation provides the but-for markup as a function of the cost, but-for quantity, and m . I derive m using real-world values and the relationship between Steam’s elasticity and the Lerner Index. Because I assume that the slope of the demand curve does not change between the actual and but-for worlds, m is fixed between the real world and but-for world (m is the negative inverse of the slope of demand). The value of m is derived below:

$$m = \epsilon_i^d(P^{rw}, Q^{rw}) \frac{Q^{rw}}{P^{rw}} = \frac{P^{rw}}{(P^{rw} - C')} \frac{Q^{rw}}{P^{rw}} = \frac{Q^{rw}}{P^{rw} - C'}$$

(A43) Replacing m with these known values in the but-for markup equation results in the following:

$$(P^{bf} - C') = \frac{Q^{bf}}{Q^{rw}} (P^0 - C')$$

$$P^{bf} = \frac{Q^{bf}}{Q^{rw}} (P^0 - C') + C'$$

(A44) In the section that follows, I calculate the values on the right-hand side of this equation and determine the but-for price.

A.3. Lerner Index and Boik and Corts equivalence

(A45) To address any concern that the Lerner Index may not apply in the platform setting, I show below that the Lerner Index holds in the Boik and Corts model, which is specifically formulated to address platforms.¹²

(A46) In Appendix A.1 I show that the asymmetric Boik and Corts model implies the following.

$$(b - d) = \frac{-12q_1^2}{3(c_1 - f_1^2)}$$

(A47) We also know, as shown in Section 7.2.1 of the report, the following.

$$\epsilon_1^2(f) = \frac{b - d}{4} \frac{f_1^2}{q_1^2}$$

(A48) Plugging the value of $(b - d)$ into this equation gives:

$$(b - d) = \frac{-12q_1^2}{3(c_1 - f_1^2)}$$

¹² Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 105.

$$\epsilon_1^d(f) = \frac{b - d f_1^2}{4 q_1^2}$$

$$\Rightarrow \epsilon_1^d(f) = \frac{-12q_1^2}{3(c_1 - f_1^2) f_1^2} = \frac{-f_1^2}{c_1 - f_1^2} = \frac{f_1^2}{f_1^2 - c_1} \Rightarrow \frac{f_1^2 - c_1}{f_1^2} = \frac{1}{\epsilon_1^d(f)} = L$$

(A49) This is the Lerner Index.

A.4. Boik and Corts modification to analytic approach

A.4.1. Overview

(A50) The Boik and Corts model gives a lower bound for the change in the slope of demand that results from removing the PMFN. I utilize this bound to illustrate the impact of adjusting the slope of demand, rather than holding it fixed as I do in my main analysis.

A.4.2. Defining terms and general equations

(A51) The notation here is borrowed from Boik and Corts and so is different from the notation in the analytic approach. To start, I re-define some key terms from that model.¹³

- f_i are platform fees for Steam or competitors. (Steam is $i = 1$ and competitor is $i = 2$)
 - Throughout the analysis I assume competitor’s fees are unchanged from the real world and the but-for world.
- p_i is the price of the games on platform i .
- f_1^{bf} is Steam’s but-for price. This is what I want to determine.
- $f_1^{rw} = \blacksquare$ is Steam’s real-world price.
- $q_1^{bf} = \blacksquare$ is the but-for quantity with no PMFN.
- $q_1^{rw} = \blacksquare$ is the real-world quantity with 2 PMFNs (the paper shows why I can assume 2 PMFNs even though only Steam has one).¹⁴

¹³ For Steam’s commission rate of \blacksquare see Valve Transaction Data, 1/28/2017–12/31/2022. See: “06_Damages.R”
 For Steams costs of \blacksquare See Attachment D-7.
 For Steams market share of \blacksquare see Attachment E-1.
 For Steams but-for share of \blacksquare see Section 8.3.4.

¹⁴ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123. (“[T]he entrant either adopts a PMFN agreement along with the incumbent or is asymmetric enough that the fee-setting equilibrium behaves as if there are two PMFN agreements.”)

- C' = [REDACTED] is Steam's marginal cost.
- $\epsilon_1^0(f_1, q_1)$ is Steam's elasticity of demand without PMFNs in place (zero PMFNs).

(A52) Additionally, the implicit demand functions are the following.

$$q_1^0(f) = \frac{1}{2}[a - b(c_s + f_1) + d(c_s + f_2)]$$

$$q_1^2(f) = \frac{1}{4}[2a + dc_s + d(f_1 + f_2) - b(2c_s + f_1 + f_2) + x]$$

A.4.3. Results and proof

(A53) The main takeaway is that the but-for markup over cost is bounded by the following inequality.

Result

$$f_1^{bf} - C' = \frac{q_1^{bf}}{-\frac{\partial q_1^0(f)}{\partial f_1}} = \frac{q_1^{bf}}{\frac{1}{2}b} < \frac{q_1^{bf}}{\frac{1}{2}(b-d)} = \frac{1}{2} \frac{q_1^{bf}}{q_1^{rw}} (f_1^{rw} - C')$$

$$\Rightarrow f_1^{bf} - C' < \frac{[REDACTED]}{[REDACTED]} [REDACTED] [REDACTED] [REDACTED]^{15}$$

$$\Rightarrow f_1^{bf} < [REDACTED]$$

(A54) This gives an upper bound on the but-for fee for Steam of [REDACTED].

Proof

(A55) The first equality follows from the Lerner Index and the definition of the firm elasticity to get the following.

$$\frac{f_1^{bf} - C'}{f_1^{bf}} = \frac{1}{\epsilon_1^0(f_1^{bf}, q_1^{bf})} = \frac{1}{-\frac{f_1^{bf}}{q_1^{bf}} \frac{\partial q_1^0(f)}{\partial f_1}}$$

¹⁵ For Steam’s commission rate of [REDACTED] see Valve Transaction Data, 1/28/2017–12/31/2022. See: "06_Damages.R"
 For Steam's costs of [REDACTED] See Attachment D-7.
 For Steam's market share of [REDACTED] see Attachment E-1.
 For Steam's but-for share of [REDACTED] see Section 8.3.4.

(A56) Canceling and rearranging gives:

$$f_1^{bf} - C' = \frac{q_1^{bf}}{-\frac{\partial q_1^0(f)}{\partial f_1}}$$

(A57) The next equality comes from the derivative of the $q_1^0(f)$ equation from Boik and Corts shown above.

$$\frac{\partial q_1^0(f)}{\partial f_1} = -b \frac{1}{2}$$

(A58) Next, the inequality holds because the term on the right is subtracting d from b in the denominator. Since $b, d > 0$ and $b > d$,¹⁶ the denominator is still positive, but is smaller than b alone. A smaller denominator makes the whole term on the right larger.

(A59) The last equality comes from two equations. First, we take the derivative of the $q_1^2(f)$ function from Boik and Corts (shown above).

$$\frac{\partial q_1^2(f)}{\partial f_1} = -\frac{1}{4}(b - d)$$

(A60) Now using the Lerner Index we can get the same derivative as a function of the real-world markup and quantity, giving:

$$\frac{\partial q_1^2(f)}{\partial f_1} = -\frac{q_1^{rw}}{f_1^{rw} - C'}$$

(A61) Putting these together gives the following, which proves the second to last equality.

$$(b - d) = 4 \frac{q_1^{rw}}{f_1^{rw} - C'}$$

(A62) The last equality comes from plugging in our known values listed above.

¹⁶ Boik, Andre and Kenneth S. Corts (2016), "The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry," *The Journal of Law and Economics* 59(1): 105–134, at 111.

B. Data Processing Appendix

B.1. Valve productions

- (A63) I use three major data productions from Valve in my report:
- Between March 31, 2023 and April 3, 2023, Valve produced several comma-separated values (CSV) files and spreadsheets in response to Requests for Production Nos. 62, 64-66, and 69-70. As in the associated letters and documentation, I refer to these data and associated tables in subsequent productions collectively as “Valve Transaction Data.”¹⁷
 - On June 2, 2023, Valve produced several CSVs and spreadsheets to supplement their response to the RFPs noted above.¹⁸ I refer to this production as “Partner Payments.”
 - On July 30, 2023, I received an additional production in response to RFP No. 76 containing lookup tables with information on app genre and tags, among others. I refer to this and similar lookup tables in the previous productions as “Lookup Tables.”
- (A64) All relevant productions from Valve were uploaded to BigQuery, a secure data warehouse part of the Google Cloud environment. BigQuery’s servers were used to store the source data, and its SQL functionality was used to combine source data to create intermediate tables.¹⁹ I outline both steps below. Additional information on this storage and all programming scripts used are available in my backup materials.

B.1.1. Data storage (BigQuery)

- (A65) The table below maps how files produced by Valve in this litigation were stored on BigQuery. The scripts I produced with my report reference the tables name in the column “BigQuery Location,” which are part of a schema called “source_data.” These source files are referenced in the SQL script in my backup materials as “source_data.[BigQuery Location].”

¹⁷ Letter from Gavin Skok to Kyle Pozan, 1/6/2023.

¹⁸ Letter from Gavin Skok to Nicholas Siebert, 6/2/2023.

¹⁹ The data can be accessed through BigQuery but are stored in a tool called Google Cloud Storage. This server is located in Northern Virginia and the data is not duplicated on any other servers in order to comply with the letter included with the hard drive, only users who have been authenticated into the project are able to access the server.

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Source File(s)	BigQuery Location
VALVE_ANT_0753183	[REDACTED]
VALVE_ANT0753184	[REDACTED]
VALVE_ANT0753185–416	[REDACTED]
VALVE_ANT0753417	[REDACTED]
VALVE_ANT0753418–565	[REDACTED]
VALVE_ANT0753566	[REDACTED]
VALVE_ANT0753567	[REDACTED]
VALVE_ANT0753568	[REDACTED]
VALVE_ANT0753569	[REDACTED]
VALVE_ANT0753570	[REDACTED]
VALVE_ANT0753571	[REDACTED]
VALVE_ANT0753571	[REDACTED]
VALVE_ANT0753571	[REDACTED]
VALVE_ANT0753571	[REDACTED]
VALVE_ANT0753572	[REDACTED]
VALVE_ANT0753573	[REDACTED]
VALVE_ANT_1589681	[REDACTED]
VALVE_ANT_1589682	[REDACTED]
VALVE_ANT_1589683	[REDACTED]
VALVE_ANT_1589684	[REDACTED]
VALVE_ANT_1589685	[REDACTED]
VALVE_ANT_1589686	[REDACTED]
VALVE_ANT_1589687	[REDACTED]
VALVE_ANT_1589688	[REDACTED]
VALVE_ANT_2579263	[REDACTED]
VALVE_ANT_2579264	[REDACTED]
VALVE_ANT_2579265	[REDACTED]
VALVE_ANT_2579266	[REDACTED]
VALVE_ANT_2579267	[REDACTED]
VALVE_ANT_2579268	[REDACTED]

B.1.2. Data manipulation (BigQuery)

- (A66) I’ve included all Structured Query Language (SQL) queries used to manipulate Valve’s production in the production of my backup materials. These queries are used to create a final analysis table. This final table and all intermediate working tables belong to the schema ‘Schwartz_Production’; this schema is produced via a physical hard drive. For convenience, I summarize these processes at a high level below.
- (A67) In this matter, Valve produced two main tables containing daily transaction records: [REDACTED]. The former, which I refer to as “package” data, reflects saleable units available on Steam’s store. The latter, which I refer to as “in-app” or “in-game” data, reflects revenues recorded as in-game transactions. The package data reflect daily transactions at the package level.²⁰ The in-game data reflect daily transactions at the app level.²¹

Combining tables

- (A68) Records from the packages and in-game tables were appended to create one table containing both revenue sources provided. I describe below the fields joined onto each table from translation tables before appending.
- (A69) [REDACTED]. Partner countries can change over time, and these dates are considered when joining to the transaction records. In addition, translation tables were used to decode [REDACTED] (both tables) and [REDACTED] (package table only).
- (A70) [REDACTED] Using the app translation provided by this table, genres, Steam categories, and revenue share transition dates were added to both the package and in-game tables.

²⁰ Packages, which are identified by a PackageID, map to saleable units like base game, a special edition, or certain downloadable content. Several packages can belong to an app, identified by an AppID. For instance, [REDACTED] and [REDACTED] are associated with the same [REDACTED].

Records in the packages data are not uniquely identified by PackageID and date of sale alone. Features of a transaction such as [REDACTED], et c. are also identified in the records.

²¹ All in-game revenue for [REDACTED] is aggregated and cannot be mapped to an individual package.

(A71) Descriptions for [REDACTED]
[REDACTED] level, respectively. Of these, only AppID is relevant for the in-app records.

Intermediate tables

(A72) Several intermediate tables are used in the manipulation of these data on BigQuery. In the scripts and data I produce, each of these tables belongs to the schema “SchwartzProduction.” I describe these tables below.

- | [REDACTED]
 - | [REDACTED]
 - | [REDACTED]
- | [REDACTED]
 - | [REDACTED]
 - | [REDACTED]
- | [REDACTED]
 - | [REDACTED]
 - | [REDACTED]
- | [REDACTED]
 - | [REDACTED]
 - | [REDACTED]
 - | [REDACTED]
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 - | [REDACTED]
 - | [REDACTED]
- | [REDACTED]
 - | [REDACTED]
 - | [REDACTED]
 - | [REDACTED]
 - | [REDACTED]

█ [REDACTED]
█ [REDACTED]
█ [REDACTED]
█ [REDACTED]
█ [REDACTED]

Creating fields

(A73) Through the course of creating one table to underpin the analyses in my report, several fields were created.

- Year – Transaction year, extracted from [REDACTED]
- Month – Transaction month, extracted from [REDACTED]
- Calculated_Take_Rate – Commission rate, calculated as $1 - \left(\frac{[REDACTED]}{[REDACTED]} \right)$
- Correct_Payment – True when contracted rates match partner payments to Valve
- Zero_Sales_Flag – True when [REDACTED] is 0
- No_Payment_Flag – True when [REDACTED] is NULL
- Small_Sales_Flag – True when absolute value of [REDACTED] is below \$1
- Base_Game_Flag – See flagging criteria above.
- App_Package_SameName – True when a package and app description are equal.

Modifying records

(A74) For records from the in-app table, [REDACTED] are assigned a value of -1.

B.1.3. Data manipulation (R)

(A75) After storing and combining these productions using BigQuery to create a main table for analysis, the R package bigrquery was used for subsequent querying and analysis. Bigrquery is an Application Programming Interface (API) that allows users to connect to BigQuery from RStudio.²² R version 4.3.1 was used, and analysis was carried out using functions available within the package collection tidyverse.²³ I include all packages used through this local

²² DBI for R, Bigrquery, <https://bigrquery.r-dbi.org/> (accessed 2/8/2024).

²³ Tidyverse, Tidyverse packages, <https://www.tidyverse.org/> (accessed 2/8/2024).

processing in the file “00_Header.R” in my backup materials. For analyses in which I generate tables found in the G section of my report’s attachments, assumptions and filtering are included in the notes below each table. Additionally, all filtering can be found in the scripts included in my backup materials.

- (A76) When collapsing data for analysis in my report involving passthrough of sale prices, records were limited to those for US customers with transactions in US dollars. Additionally, I remove sales that took place as part of bundles, remove games published by Valve, filter records to base games, and limit to games with an AppType of 1 (playable game).²⁴ I then aggregate the data to the date and package level. Given sale prices can vary within a day (usually due to sale periods or delayed returns), I calculate a quantity-weighted average sale price.²⁵
- (A77) Though most flagging and fields were created in BigQuery, a few additional fields were generated in R for this analysis, including:
- days_since_tier1 – a running tally of days since a game crossed into the 25% commission threshold.
 - obs_360_days - identifies if the game package has at least 50% of the daily pricing data available in the 720-day time window around crossing the Tier 1 threshold.
- (A78) For other analyses, assumptions and filtering are included in the notes in each attachment. Additionally, all filtering can be found in the scripts included in my backup materials.

²⁴ See table EAppType (VALVE_ANT0753570).

²⁵ This calculated price weights quantities only using records with net positive transactions and revenues. For instance, if a package had two recorded sale prices on 1/1/2020, but one was only associated with returns from previous sales, I do not consider the previous sale price in my calculation.



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Attachment A-1

February 2024

Steven Schwartz, Ph.D.

Managing Director

Dr. Steven Schwartz is a Managing Director at Intensity, a Secretariat Company. With extensive experience in economic consulting, he has been retained as an economic expert in numerous litigation and non-litigation matters and has provided testimony before the U.S. International Trade Commission and the U.S. Tax Court, federal and state courts.

Dr. Schwartz has over 35 years of economic consulting experience and has applied his expertise in high-stakes disputes related to commercial success, irreparable harm, lost profits, reasonable royalties, economic domestic industry considerations, and unjust enrichment. His areas of expertise include:

- Antitrust and Competition
- Intellectual Property Damages and Valuation
- Damages Assessment in Complex Commercial Disputes
- Class Certification
- Securities and Finance Litigation

Examples of Dr. Schwartz work include:

- Analysis of pricing behavior by a company that pled guilty to price fixing as a part of a larger conspiracy to determine the impact on the firm and to assess the portion of its price increases attributable to the conspiracy as opposed to non-collusive factors such as cost increases.
- Assessment to the damages suffered by a residential home builder and land developer as a result of alleged breaches of contracts and fraud by another home builder. The analysis included a determination of the number of homes the Plaintiff would have built and sold in the absence of the alleged breaches and fraud, as well as the losses the firm would incur as it attempted to re-enter the market, post-fraud.
- Analysis of the commercial success of a branded drug in the context of a Hatch-Waxman dispute; the branded drug was a late entrant into the market, i.e., after the entry of competitors selling generic versions of first and second-generation drugs, and Dr. Schwartz provided an assessment of the drug's performance and success in the context of a market dominated by generic competitors.
- Analyzed the damages suffered by an aircraft manufacturer as a result of a patent infringement by a rival manufacturer of a component of the aircraft at issue. The royalty analysis considered the appropriate royalty in a case in which the infringing product was never sold.

Dr. Schwartz's consulting background spans many industries, such as hospitality, consumer goods, electronics, gaming, and pharmaceuticals, among others. He has also consulted in a variety of business, valuation and strategic planning issues.

Education

Ph.D., Economics, University of Maryland

M.A., Economics, University of Maryland

B.A., Economics, Wesleyan University

Professional Experience

Intensity, a Secretariat Company (formerly Intensity, LLC). Managing Director, 2021 to present.

Charles River Associates, Vice President, 2015 to 2020.

Alvarez & Marsal, Global Forensic and Dispute Services, Managing Director, 2011 to 2015.

NERA Economic Consulting, Senior Vice President (Final Position), 1984 to 2011.

Miami University, Assistant Professor of Economics, 1980 to 1984.

Federal Trade Commission, Economist, 1979 to 1980.

Publications and Papers

"An Overview of Market Definition in the 2023 Merger Guidelines" with Jason Albert, Jessica Dutra, Richard Manning, Anushree Subramaniam, Wei Tan, Pablo Varas and Keith Waehrer, *Secretariat Client Alert* available at <https://secretariat-intl.com/insights/an-overview-of-market-definition-in-the-2023-merger-guidelines/>, December 2023 (update to July 2023 version).

"An Overview of Market Definition in the Draft Merger Guidelines" with Jason Albert, Jessica Dutra, Richard Manning, Anushree Subramaniam, Wei Tan, Pablo Varas and Keith Waehrer, *Secretariat Client Alert* available at <https://secretariat-intl.com/insights/an-overview-of-market-definition-in-the-draft-merger-guidelines/>, July 2023.

"The Use of Econometric and Statistical Analysis in Damages" with Jennifer Vanderhart, Richard Brady and Aminta Raffalovich, *The Guide to Damages in International Arbitration-Fifth Edition*, available at <https://globalarbitrationreview.com/guide/the-guide-damages-in-international-arbitration/5th-edition>, December 2022.

“An Overview of Trade Secret Misappropriation Damages.” With Christopher Gerardi and Hong Qiao. *Trade Secret Protection: A Global Guide*, 2nd ed., edited by Trevor Cook, Globe Law and Business, June 2022.

“Antitrust Analysis of FRAND Licensing Post-FTC v. Qualcomm,” *The Journal of the Antitrust and Unfair Competition Section of the California Lawyers Association*, Volume 31, No. 1, Spring 2021 (with Aminta Raffalovich).

“Pricing Challenges for Hotels in a Price Parity World.” *The Price Point*, Volume 17, Issue 2, Spring 2017.

Speaking Engagements

“Don’t Squat on Your Spurs: Ethical Issues in Class Actions Involving Injury and Experts” American Bar Association Class Action Institute, April 13, 2022.

“What Can You Prove with Statistical Evidence, or How Do I Know if All Those Numbers Are Good or Bad”, ABA Webinar Series, March 14, 2022.

“Valuing Intellectual Property in the Case of Free-to-Consumer Goods, Webinar, April 6, 2021, and June 29, 2021.

Panelist, “Cyber Breach Aftermath: Civil Litigation, Insurance Risks and SEC Perspective”, American Bar Association Annual Meeting, Chicago, IL, August 2, 2018.

“Dealing with a Breach’s Long-Term Fallout” *Corporate Counsel*, March 2018.

Panel Presentation “Cyber Breach Aftermath: Civil Litigation, Insurance Claims and Regulatory Perspective” Association of Corporate Counsel CLE Program, Chicago, IL, January 2018.

Presentation to McGuire Woods LLP, Dallas, TX, August 8, 2017.

Public Symposium, Developments in Trade Secret Protection, sponsored by United States Patent and Trademark Office, Washington, D.C., May 8, 2017.

Testimony and Affidavits

1. Deposition Testimony in *Apple, Inc. v. Masimo Corporation and Sound United, LLC and Masimo Corporation and Ceracor Laboratories, Inc. v. Apple, Inc.*, United States District Court for the District of Delaware, C.A. No. 1:22-cv-01378-MN, January 2024.
2. Trial Testimony in In the Matter of *Certain Bio-Layer Interferometers and Components Thereof*, United States International Trade Commission, Inv. No. 337-TA-1344, November 2023.
3. Deposition Testimony in In the Matter of *Certain Bio-Layer Interferometers and Components Thereof*, United States International Trade Commission, Inv. No. 337-TA-1344, May 2023.
4. Deposition Testimony in *World Champ Tech LLC v. Peloton Interactive, Inc.*, United States District Court, Northern District of California, San Francisco Division, Case No. 3:21-cv-03202-LB, April 2023
5. Deposition Testimony in *In Re: Google Play Store Antitrust Litigation: Match Group, LLC, Humor Rainbow, Inc., PlentyOfFish Media ULC, and People Media, Inc. v. Google LLC, Google Ireland Limited, Google Commerce Limited, Google Asia Pacific PTE. Limited, and Google Payment Corp.* United States District Court, Northern District of California, Case Nos. 3:21-md-02981 and 3:22-cv-02746, March 2023.
6. Deposition Testimony in *Healthcare Recovery Group, LLC v. Coresource, Inc.*, In the Circuit Court of Cook County, Illinois, County Department, Law Division, Case No. 07-CH-016360, October 2022.
7. Declaration of Steven Schwartz, Ph.D., *Barrientos et al. v. CoreCivic, Inc.*, United States District Court, Middle District of Georgia, Case No. 4:18-cv-00070, October 2022.
8. Deposition Testimony in *PureCircle USA Inc. and PureCircle SDN BHD v. Sweegen, Inc. and Phyto Tech Corp. d/b/a Blue California*, Case No. 8:18-cv-1679 JVS (JDE), United States District Court, Central District of California, Southern Division, January 2022.
9. Deposition Testimony in *Baxalta Incorporated and Baxalta GmbH v. Genentech Inc. and Chugai Pharmaceutical Co., Ltd.*, District of Delaware, C.A. No. 17-509-TBD, August 2021.
10. Deposition Testimony in *Panasonic Corporation v. Getac Technology Corporation and Getac, Inc.*, Central District of California, Case No. 8:19-CV-01118-DOC-DFM, March 2021.
11. Deposition Testimony in *In re. Aetna Litigation*, Central District of California, Case No. 19-cv-04035, February 2020. (Retained by counsel to KCC Class Action Services, LLC and Kurtzman Carson Consultants, LLC)
12. Deposition Testimony in *Impax Laboratories, Inc. v. Zydus Pharmaceuticals (USA) Inc., et al.*, United States District Court, District of New Jersey, Civil Action No. 2:17-cv-13476 (SRC)(CLW), January 2020. (Retained by counsel to Impax Laboratories)

Reports

13. Report of Steven Schwartz, Ph.D. in *Gerald Hayden v. International Business Machines Corporation, Pablo Suarez and Shankar Ramamurthy*, United States District Court for the Southern District of New York, Case No, 7:210CV-02485-VB, February 2024.
14. Reply Report of Steven Schwartz, Ph.D. in *Apple, Inc. v. Masimo Corporation and Sound United, LLC and Masimo Corporation and Ceracor Laboratories, Inc. v. Apple, Inc.*, United States District Court for the District of Delaware, C.A. No. 1:22-cv-01378-MN, January 2024.
15. Report of Steven Schwartz, Ph.D. in *Allergan, Inc., Allergan Pharmaceuticals Ireland Unlimited Company, and Allergan USA, Inc. v. Revance Therapeutics, Inc. and Ajinomoto Althea, Inc. d/b/a Ajinomoto Bio-Pharma Services*, Civil Action No. 21-1411-RGA in the United States District Court for the District of Delaware, December 2023.
16. Rebuttal Report of Steven Schwartz, Ph.D. in *Apple, Inc. v. Masimo Corporation and Sound United, LLC and Masimo Corporation and Ceracor Laboratories, Inc. v. Apple, Inc.*, United States District Court for the District of Delaware, C.A. No. 1:22-cv-01378-MN, December 2023.
17. Report of Steven Schwartz, Ph.D. in *Allergan, Inc., Allergan Pharmaceuticals Ireland Unlimited Company, and Allergan USA, Inc. v. Revance Therapeutics, Inc. and Ajinomoto Althea, Inc. d/b/a Ajinomoto Bio-Pharma Services*, Civil Action No. 21-1411-RGA in the United States District Court for the District of Delaware, December 2023.
18. Opening Report of Steven Schwartz, Ph.D. in *Apple, Inc. v. Masimo Corporation and Sound United, LLC and Masimo Corporation and Ceracor Laboratories, Inc. v. Apple, Inc.*, United States District Court for the District of Delaware, C.A. No. 1:22-cv-01378-MN, November 2023.
19. Supplemental Report of Steven Schwartz, Ph.D., *Barrientos et al. v. CoreCivic, Inc.* United States District Court, Middle District of Georgia, Case No. 4:18-cv-00070, July 2023.
20. Report of Steven Schwartz, Ph.D., In the Matter of *Certain Bio-Layer Interferometers and Components Thereof*, United States International Trade Commission, Inv. No. 337-TA-1344, April 2023.
21. Expert Report of Steven Schwartz, Ph.D., *World Champ Tech LLC v. Peloton Interactive, Inc.*, United States District Court, Northern District of California, San Francisco Division, Case No. 3:21-cv-03202-LB, February 2023.
22. Rebuttal Report of Steven Schwartz, Ph.D., *In Re: Google Play Store Antitrust Litigation: Match Group, LLC, Humor Rainbow, Inc., PlentyOfFish Media ULC, and People Media, Inc. v. Google LLC, Google Ireland Limited, Google Commerce Limited, Google Asia Pacific PTE. Limited, and Google Payment Corp.* United States District Court, Northern District of California, Case Nos. 3:21-md-02981 and 3:22-cv-02746. November 2022.
23. Expert Report of Steven Schwartz, Ph.D., *In Re: Google Play Store Antitrust Litigation: Match Group, LLC, Humor Rainbow, Inc., PlentyOfFish Media ULC, and People Media, Inc. v. Google LLC, Google Ireland Limited, Google Commerce Limited, Google Asia Pacific PTE. Limited, and Google Payment Corp.* United States District Court, Northern District of California, Case Nos. 3:21-md-02981 and 3:22-cv-02746. October 2022.

24. Expert Report of Steven Schwartz, Ph.D., *Healthcare Recovery Group, LLC v. Coresource, Inc.*, In the Circuit Court of Cook County, Illinois, County Department, Law Division, Case No. 07-CH-016360, August 2022.
25. Report of Steven Schwartz, Ph.D., in *Between Farmers Edge, Inc. and Precision Weather Solutions Inc., and Between Precision Weather Solutions Inc., and Farmers Edge Inc., Wade Barnes, Curtis Mackinnon, and Trevor Armitrage*, The Queen's Bench Winnipeg Center, File No. CI 15-01-99336, March 28, 2022.
26. Report of Steven Schwartz, Ph.D., *PureCircle USA Inc. and PureCircle SDN BHD v. Sweegen, Inc. and Phyto Tech Corp. d/b/a Blue California*, United States District Court, Central District of California, Southern Division, Case No. 8:18-cv-1679 JVS (JDE), December 2021.
27. Expert Report of Steven Schwartz, Ph.D., *Barrientos et al. v. CoreCivic, Inc.* United States District Court, Middle District of Georgia, Case No. 4:18-cv-00070, December 2021.
28. Rebuttal Expert Report of Steven Schwartz, Ph.D., *Baxalta Incorporated and Baxalta GmbH v. Genentech Inc. and Chugai Pharmaceutical Co., Ltd.*, District of Delaware, C.A. No. 17-509-TBD, June 2021.
29. Report of Steven Schwartz, Ph.D., *Panasonic Corporation v. Getac Technology Corporation and Getac, Inc.*, Central District of California, Case No. 8:19-CV-01118-DOC-DFM, March 2021.
30. Rebuttal Economist's Report of Steven Schwartz, Ph.D., *In re. Aetna Litigation*, Central District of California, Case No. 19-cv-04035, February 2020.
31. Economist's Report of Steven Schwartz, Ph.D., *In re. Aetna Litigation*, Central District of California, Case No. 19-cv-04035, February 2020.
32. Expert Report of Steven Schwartz, Ph.D., *Impax Laboratories, Inc. v. Zydus Pharmaceuticals (USA) Inc., et al.*, United States District Court, District of New Jersey, Civil Action No. 2:17-cv-13476 (SRC)(CLW), November 2019.
33. Expert Report of Steven Schwartz, Ph.D., in Rebuttal to the June 14, 2019 Report of Matthew Hoelle and to the July 15, 2019 Report of David W. DeRamus *Rockwell Automation, Inc., v. Radwell International, Inc.*, U.S. District Court, District of New Jersey, Case No. 1:15-cv-05246-RBK-JS, October 2019.
34. Supplement to June 14, 2019 Expert Report of Steven Schwartz, Ph.D., *Rockwell Automation, Inc., v. Radwell International, Inc.*, U.S. District Court, District of New Jersey, Case No. 1:15-cv-05246-RBK-JS, October 2019.
35. Expert Report of Steven Schwartz, Ph.D., in *Eli Lilly and Company v. Eagle Pharmaceuticals, Inc.*, United States District Court, District of Delaware, Case No. 17-cv-1293 (MSG), June 2019.
36. Expert Report of Steven Schwartz, Ph.D., in *Rockwell Automation, Inc., v. Radwell International, Inc.*, U.S. District Court, District of New Jersey, Case No. 1:15-cv-05246-RBK-JS, June 2019.

37. Economist's Report in Connection with Plaintiff's Motion for Class Certification in *Medbor Chavez, individually and on behalf of all others similarly situated v. FBL Financial Group, Inc., Farm Bureau Property & Casualty Ins. Co., Farm Bureau Life Insurance and Western Agricultural Insurance Company*, U.S. District Court for the District of Kansas at Kansas City, Case No. 2:17-02393-DDC-ADM, May 2019.
38. Rebuttal Expert Witness Statement and Report of Steven Schwartz, Ph.D., in Connection with *Hibernia v. Teza*, Hibernia Express (Ireland) Limited, successor to Hibernia Atlantic U.S. LLC v. Teza Technologies LLC, International Chamber of Commerce, ICC Case No. 22784/MK, June 2018.
39. Expert Witness Statement and Report of Steven Schwartz, Ph.D., in Connection with *Hibernia v. Teza*, Hibernia Express (Ireland) Limited, successor to Hibernia Atlantic U.S. LLC v. Teza Technologies LLC, International Chamber of Commerce, ICC Case No. 22784/MK, April 2018.
40. Update to Expert Report of Steven Schwartz, Ph.D., *D.R. Horton, Inc.-Huntsville; D.R. Horton, Inc. v. Breland Homes, LLC, et al. and Louis W. Breland, et al. v. D.R. Horton, Inc.-Huntsville, et al.*, In the Circuit Court of Baldwin County, Alabama, Case No.: 2014-cv-901450.00, April 2018.
41. Rebuttal Expert Report of Steven Schwartz, Ph.D., *D.R. Horton, Inc.-Huntsville; D.R. Horton, Inc. v. Breland Homes, LLC, et al. and Louis W. Breland, et al. v. D.R. Horton, Inc.-Huntsville, et al.*, In the Circuit Court of Baldwin County, Alabama, Case No.: 2014-cv-901450.00, January 2018.
42. Rebuttal Expert Report in Connection with a Confidential Arbitration in Stockholm, Sweden, December 2017.
43. Expert Report in Connection with a Confidential Arbitration in Stockholm, Sweden, November 2017.
44. Expert Report of Steven Schwartz, Ph.D., *D.R. Horton, Inc.-Huntsville; D.R. Horton, Inc. v. Breland Homes, LLC, et al. and Louis W. Breland, et al. v. D.R. Horton, Inc.-Huntsville, et al.*, In the Circuit Court of Baldwin County, Alabama, Case No.: 2014-cv-901450.00, November 2017.
45. Expert Report of Steven Schwartz, Ph.D., *Boehringer Ingelheim Pharmaceuticals, Inc. et al. v. HEC Pharm Co., Ltd et al.*, United States District Court, District of New Jersey, Civil Action No. 3:15-cv-05982-PGS-TJB (consolidated), October 2017.
46. Expert Report of Steven Schwartz, Ph.D. Regarding Validity of U.S. Patent Nos. 8,557,283; 9,089,608, 9,463,246, and 9,533,046, *Impax Laboratories, Inc. v. Actavis Laboratories FL, Inc. and Actavis Pharma Inc.*, United States District Court, District of New Jersey, Civil Action No. 15-6934 (SRC) (CLW), September 2017.
47. Supplemental Economist's Report in Connection with *Perrigo Company, Sergeant's Pet Care Products, Inc. d/b/a Perrigo Animal Health, Velcera, Inc. and FidoPharm, Inc. v. Merial Limited d/b/a Merial LLC*, United States District Court for the Northern District of Georgia (Atlanta Division), Civ. Action No.: 1:15-cv-03674 (SCJ), August 2017.

48. Economist's Report in Connection with *Perrigo Company, Sergeant's Pet Care Products, Inc. d/b/a Perrigo Animal Health, Velcera, Inc. and FidoPharm, Inc. v. Merial Limited d/b/a Merial LLC*, United States District Court for the Northern District of Georgia (Atlanta Division), Civ. Action No.: 1:15-cv-03674 (SCJ), May 2017.
49. Initial Report of Steven Schwartz, Ph.D., in Connection with *Select Comfort v. Tempur Sealy International, Inc., d/b/a Tempur-Pedic*, United States District Court, District of Minnesota, 14-CV-00245-JNE-JSM, May 2016.
50. Report of Steven Schwartz, Ph.D., in Connection with *Airbus Helicopters S.A.S. and Bell Helicopter Textron Canada Limitee*, Federal Court, Docket: T-737-08, April 2016.
51. Initial Report in Connection with *Steven C. Jacobs v. Las Vegas Sands Corp., et al.*, District Court, Clark County, Nevada, Case No; A-10-627691, Dept. No. XI., March 2016.
52. Expert Report in *Thomas Skold v. Galderma Laboratories, L.P., Galderma Laboratories, Inc., and Galderma, S.A.*, United States District Court, Eastern District of Pennsylvania, Case No. 2:14-cv-05280-TJS, October 2015.
53. Expert Report in connection with *Timberline Energy, LLC v. Waste Connections of Kansas, Inc.*, Case No. 2014CV03269, District Court, City and County of Denver, State of Colorado, August 2015.
54. Expert Report in *TrueCar, Inc. v. Sonic Automotive, Inc. and Sonic Divisional Operations, LLC*, United States District Court, Central District of California (Western Division) Case No. 2:13-cv-05812-CBM-FFM, April 2015.
55. Expert Report in *Virginia Forklift, Inc. v. Crown Equipment Corporation* in Arbitration before JAMS, January 2015.
56. Expert Report in *M.B. Signal, Inc. v. AT&T/Cingular Wireless*, American Arbitration Association Case No. 54 494 Y 00237 09, January 2014.
57. Expert Report in *Cellular Cellutions, Inc. et al. v. AT&T/Cingular Wireless*, American Arbitration Association Case No. 54 494 Y 1382 08, January 2014.

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Attachment A-2
Materials Considered

Pleadings and filings

4/27/2021	FED. R. CIV. P. 7.1 Statement of Wolfire Games, LLC.
6/28/2021	Class Action Complaint for Damages and Injunctive Relief.
6/28/2021	Plaintiff Dark Catt Studios Holdings, Inc.’s and Dark Catt Studios Interactive LLC’s Corporate Disclosure Statement Pursuant to FED. R. CIV. P. 7.1 and LCR 7.1.
7/6/2021	Civil Docket for Case #: 2:21-cv-00872-DWC.
11/19/2021	Order.
12/20/2021	Second Amended Consolidated Class Action Complaint.
12/20/2021	Amended Class Action Complaint.
3/11/2022	Dark Catt Plaintiffs’ Opposition to Motion to Dismiss Amended Class Action Complaint.
5/6/2022	Order.
6/10/2022	Answer and Affirmative Defenses to Amended Class Action Complaint.
6/10/2022	Defendant Valve Corporation’s Answer and Affirmative Defenses to Second Amended Consolidated Class Action Complaint.
7/22/2022	Civil Docket for Case #: 2:21-cv-00563-JCC.
7/22/2022	Stipulated Motion to Consolidate Related Actions Under Local Civil Rule 42.
8/5/2022	Plaintiffs’ First Set of Requests for the Production of Documents on Defendant Valve Corporation.
8/12/2022	[Proposed] Order Regarding LCR 37 Submission RE Case Schedule and Valve’s Response to Consolidated Class Action Complaint.
8/17/2022	Plaintiffs’ First Set of Interrogatories to Defendant Valve Corporation.

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8/22/2022 Stipulated Motion for Entry of Case Schedule.

8/26/2022 Consolidated Amended Class Action Complaint.

9/16/2022 Valve Corporation’s Responses and Objections to Plaintiffs’ First Set of Interrogatories.

9/20/2022 Valve Corporation’s Responses and Objections to Plaintiffs’ First Set of Requests for Production of Documents.

9/23/2022 Defendant Valve Corporation’s Answer and Affirmative Defenses to Consolidated Amended Class Action Complaint.

11/29/2022 Plaintiffs’ Second Set of Requests for the Production of Documents on Defendant Valve Corporation.

1/13/2023 ArenaNet, LLC Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/13/2023 Electronic Arts, Inc. Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/13/2023 NC Interactive, LLC Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/13/2023 Roblox Corporation Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/13/2023 Ubisoft, Inc. Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/17/2023 Notice of Subpoenas to Produce Documents.

1/17/2023 NC West Holdings, Inc. Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/17/2023 Riot Games, Inc. Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/17/2023 Take-Two Interactive Software, Inc. Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/20/2023 Nexon America, Inc. Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

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1/20/2023 Nintendo of America Inc. Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/20/2023 Smilegate Megaport US Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/20/2023 Sony Corporation of America Subpoena to Produce Documents, Information, or Objects or to Permit Inspection of Premises in a Civil Action.

1/27/2023 Plaintiffs’ Second Set of Interrogatories to Defendant Valve Corporation.

1/27/2023 Valve Corporation’s Supplemental Response to Interrogatory No. 1.

1/30/2023 Notice of Issuance of Subpoenas to Produce Documents.

3/13/2023 Valve Corporation’s Responses and Objections to Plaintiffs’ Second Set of Interrogatories.

3/23/2023 Consolidated Second Amended Class Action Complaint.

5/1/2023 Stipulated Motion to Modify Case Schedule.

5/8/2023 Email Regarding Valve’s Interrogatory Objections and Responses.

6/9/2023 Plaintiffs’ Third Set of Requests for the Production of Documents on Defendant Valve Corporation.

6/20/2023 Plaintiffs’ Third Set of Interrogatories to Defendant Valve Corporation.

7/5/2023 Valve Corporation’s Supplemental Responses and Objections to Plaintiffs’ Second Set of Interrogatories.

7/12/2023 Plaintiffs’ Fourth set of Requests for the Production of Documents on Defendant Valve Corporation.

7/14/2023 Plaintiffs’ Fourth Set of Interrogatories to Defendant Valve Corporation.

7/14/2023 Plaintiffs’ Fourth Set of Requests for the Production of Documents on Defendant Valve Corporation.

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7/20/2023 Valve Corporation’s Responses and Objections to Plaintiffs’ Third Set of Interrogatories.

8/14/2023 Valve Corporation’s Responses and Objections to Plaintiffs’ Fourth Set of Interrogatories.

8/23/2023 Plaintiffs’ Notice of FED. R. CIV. P. 30(B)(6) Deposition to Defendant Valve Corporation.

9/15/2023 Valve Corporation’s Supplemental Responses and Objections to Plaintiffs’ Third Set of Interrogatories.

9/15/2023 Valve Corporation’s Second Supplemental Responses and Objections to Plaintiffs’ Second Set of Interrogatories.

10/31/2023 Plaintiffs’ First Set of Requests for Admission to Defendant Valve Corporation.

10/31/2023 Plaintiffs’ Fifth Set of Requests for the Production of Documents to Defendant Valve Corporation.

11/30/2023 Valve Corporation’s Responses and Objections to Plaintiffs’ First Set of Requests for Admission.

1/12/2024 Stipulated Motion to Modify Case Schedule.

Valve letters

1/6/2023 Valve Corporation’s Letter Regarding Plaintiffs’ Requests for Production of Transactional Data.

3/10/2023 Valve Corporation’s Letter Regarding Plaintiffs’ Remaining Issues Relating to Requests for Production of Transactional Data.

3/22/2023 Valve Corporation’s Letter Regarding Transactional Data.

3/31/2023 Valve Corporation’s Letter Regarding Production of Transactional Data.

6/2/2023 Valve Corporation’s Letter Regarding Summary of Transactional Data Negotiations.

10/6/2023 Valve Corporation’s Letter Regarding Plaintiffs’ Request for Production and Request for Answers.

10/17/2023 Valve Corporation’s Letter Regarding Confidentiality Breach.

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Undated Valve Corporation’s Package Rollup Finance Daily List.

Interviews

Joost Rietveld, Ph.D., Associate Professor at University College London School of Management, 1/26/2024.

David Rosen, Wolfire Games, CEO and Lead Programmer, 2/1/2024.

John Robb, Dark Catt Studios, Chief Executive Officer, 2/5/2024.

Deposition testimony

Nathaniel Blue Valve Corporation, Steam Business Team, 10/4/2023, Exhibits 76–96.

Antal Bokor Third Coast Review, Games and Tech Editor, 10/17/2023, Exhibits 1–27.

Chris Boyd Valve Corporation, Software Developer, 11/17/2023, Exhibits 309–313.

Chris Boyd 30(b)(6) Valve Corporation, Software Developer, 11/17/2023, Exhibit 314.

Tom Bui Valve Corporation, Developer, 11/6/2023, Exhibits 205–227.

Augusta Butlin Valve Corporation, Steam Business Team, 10/11/2023, Exhibits 59, 119–131.

Al Farnsworth Valve Corporation, Software Engineer, 11/7/2023, Exhibits 228–242.

Al Farnsworth 30(b)(6) Valve Corporation, Software Engineer, 11/7/2023, Exhibit 53.

Adam Fossa Microsoft Corporation, Director and General Manager of the Microsoft Store, 1/29/2024.

Kassidy Gerber Valve Corporation, Steam Business Team, 10/5/2023, Exhibits 97–118.

Tom Giardino Valve Corporation, Steam Business Team, 11/2/2023, Exhibits 178–199.

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Erik Johnson	Valve Corporation, N/A, 9/26/2023, Exhibits 22–28.
Adam Klaff	Valve Corporation, Steam Business Team, 11/14/2023.
Alden Kroll	Valve Corporation, Steam Business Team, 11/16/2023, Exhibits 242–304.
Tyler Leutner	Dark Catt, former Sound Engineer, 10/16/2023, Exhibits 1–6.
Jane Lo	Valve Corporation, Finance, 11/28/2023.
Andrew Loomer 30(b)(6)	Valve Corporation, Business Support, 11/3/2023, Exhibits 200–204.
Scott Lynch	Valve Corporation, Chief Operating Officer, 10/12/2023, Exhibits 132–144.
Scott Lynch 30(b)(6)	Valve Corporation, Chief Operating Officer, 10/13/2023, Exhibits 145–160.
Connor Malone	Valve Corporation, Steam Business Team, 11/8/2023, Exhibits 243–272.
Kristian Miller	Valve Corporation, Data Science and Software Development, 10/3/2023, Exhibits 66–75.
Merlyn Morgan-Graham	Wolfire Games, former Producer, 11/15/2023.
Gabe Newell	Valve Corporation, Chief Executive Officer, 11/21/2023, Exhibits 349–366.
Matt Nickerson	Devolver, Head of Business Development, 11/20/2023, Exhibit 337.
Jason Owens	Dark Catt, Business Development, 12/5/2023, Exhibits 1–41.
Erik Peterson	Valve Corporation, Steam Business Team, 11/15/2023, Exhibits 68–296.
DJ Powers	Valve Corporation, Steam Business Team, 9/28/2023, Exhibits 24–52.
DJ Powers 30(b)(6)	Valve Corporation, Steam Business Team, 9/29/2023, Exhibits 53–65.

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John Robb Dark Catt, Chief Executive Officer, 11/28/2023.

David Rosen Wolfire Games, CEO and Lead Programmer, 12/1/2023, Exhibits 64–82.

David Rosen 30(b)(6) Wolfire Games, CEO and Lead Programmer, 11/30/2023.

Jeffrey Rosen Wolfire Games, President, 11/17/2023, Exhibits 1–11.

Jason Ruymen Valve Corporation, Third-Party Games Support, 9/19/2023, Exhibits 1–21.

Chris Schenck Valve Corporation, In-House Counsel, 12/8/2023, Exhibits 382, 387.

Lisa Strago Valve Corporation, Finance Team (Tax), 12/12/2023.

Jacob Troyer Dark Catt, former Game Programmer, 11/27/2023.

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