
THE COLUMBIA
SCIENCE & TECHNOLOGY
LAW REVIEW

VOLUME 22

STLR.ORG

NUMBER 2

ARTICLE

APPROACHES TO ASSESS MARKET POWER IN THE
ONLINE NETWORKING MARKET

Shin-Ru Cheng*

Facebook, the world's largest online networking platform, is the subject of multiple antitrust investigations by various state and federal regulators. Yet scholars and practitioners remain divided on how to measure Facebook's market power. Some argue that conventional approaches for identifying market power are suitable for the online networking market. This Article argues such conventional approaches are inadequate for assessing market power in online networking markets.

This Article begins by introducing the traditional approaches that courts have employed to assess market power: the direct effects approach, the Lerner Index approach, and the market share approach. It next describes Facebook's business model and shows that, because Facebook is a two-sided market, these traditional approaches should not be applied to Facebook.

Instead, the Article proposes that the information gaps, switching costs, and entry barriers approaches are better suited for assessing the market power of online networking platforms. The Article thus concludes by proposing a legal framework for assessing market power in online networking platforms which employs such non-traditional approaches. While this Article uses Facebook as the main case study, this paper's findings are equally applicable to similar online networking platforms.

* Shin-Ru Cheng is a J.S.D. candidate at the Washington University in St. Louis; MJur, University of Oxford; L.L.M., UC Berkeley; L.L.B., National Taiwan University. Admitted to Taipei Bar Association. Admission to California bar expected in September 2021. I am deeply indebted to Professor Lee Epstein, Professor Gerrit DeGeest and Professor John Drobak for all their valuable advice on this article. I also appreciate all editors for their assistance.

I. INTRODUCTION.....	232
II. TRADITIONAL APPROACHES TO ASSESS MARKET POWER	235
A. <i>Direct Effects Approach</i>	236
B. <i>Lerner Index Approach</i>	237
C. <i>Market Share Approach</i>	238
III. APPLYING TRADITIONAL APPROACHES TO THE ONLINE NETWORKING MARKET	240
A. <i>Facebook’s Business Model</i>	240
B. <i>Limitations of Traditional Approaches to the Online Networking Market</i>	250
IV. NEW APPROACHES TO ASSESS MARKET POWER IN THE ONLINE NETWORKING PLATFORMS	252
A. <i>Information Gaps Approach</i>	252
B. <i>Switching Costs Approach</i>	254
C. <i>Entry Barriers Approach</i>	257
V. CONCLUSION	260

I. INTRODUCTION

Digital platforms play an essential role in fostering economic growth. This is because they “facilitate trusted transactions between strangers on a digital platform,”¹ allowing users to communicate and transact efficiently over the internet. Facebook is one of the most successful digital platforms in today’s world.

Facebook is a two-sided market, meaning that the platform serves as an intermediary to facilitate communications and transactions between two groups: consumer users and advertisers.² The rapid development of the internet has strengthened the intermediary role of online networking platforms because they can now “offer faster, better, smarter, cheaper, and more convenient solutions to consumers’ wants, needs, and desires.”³

¹ See Ryan Calo & Alex Rosenblat, *The Taking Economy: Uber, Information, and Power*, 117 COLUM. L. REV. 1623, 1625 (2017) (citing Orly Lobel, *The Law of the Platform*, 101 MINN. L. REV. 87, 89 (2016)); see also Lina M. Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 1000 (2019).

² See Rob Frieden, *Two-Sided Internet Markets and the Need to Assess Both Upstream and Downstream Impacts*, 68 AM. UNIV. L. REV. 713, 716 (2019); see also Lapo Filistrucchi, et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. COMPETITION L. & ECON. 293, 296-99 (2014).

³ See Frieden, *supra* note 2, at 721 (citing Frand Pasquale, *Privacy, Antitrust, and Power*, 20 GEO. MASON L. REV. 1009, 1010 (2013)).

Today, Facebook is the wealthiest online social networking platform in the world based on number of users and overall revenue.⁴ Facebook has approximately 244 million monthly active users in the United States and Canada, encapsulating approximately 90.9 percent of the U.S. market.⁵

Facebook's success comes from its outstanding ability to meet users' social needs. The platform provides a costless medium for users to build social lives, fulfilling the "need to belong" and "need for self-presentation."⁶ Furthermore, Facebook has served as an important information center that allows users to learn about the world in a more efficient way.⁷ An empirical study has shown that around 69 percent of American adults are Facebook users, and around 74 percent of them visit Facebook every day.⁸

However, Facebook's dominant market share raises serious antitrust concerns. Facebook's large market share strengthens market concentration – leading to a very limited number of players in the market.⁹ High market concentration is traditionally considered an indicator of market power.¹⁰ Furthermore, high market concentration is associated with entry barriers—another indicator of market power.¹¹ As a result, over the past three years, 47 state attorneys general, the Department of Justice, and Congress have all announced antitrust investigations involving Facebook.¹²

⁴ For example, Facebook launched the COVID-19 Information Center that updated daily. Therefore, its users can access to latest information on COVID-19 development easily via Facebook. See Facebook, *COVID-19 Information Center*, https://www.facebook.com/coronavirus_info.

⁵ See *Social Media Usage in the United States*, STATISTA, at 52 (2020).

⁶ See Ashwini Nadkarni & Stefan G. Hofmann, *Why Do People Use Facebook?*, 52 *PERSONALITY & INDIVIDUAL DIFFERENCES* 243, 243 (2012).

⁷ See *Introducing Facebook News*, FACEBOOK (2021), <https://www.facebook.com/news/learn-more>.

⁸ See John Gramlich, *10 Facts About Americans and Facebook*, PEW RESEARCH CENTER (May 16, 2019), <https://www.pewresearch.org/fact-tank/2019/05/16/facts-about-americans-and-facebook/>.

⁹ See Chris Butts, *The Microsoft Case 10 Years Later: Antitrust and New Leading "New Economy" Firms*, 8 *NW. J. TECH. & INTELL. PROP.* 275, 290 (2010); see also Kenneth A. Bamberger & Orly Lobel, *Platform Market Power*, 32 *BERKELEY TECH. L. REV.* 1051, 1064 (2017); Howard A. Shelanski, *Information, Innovation, and Competition Policy for The Internet*, 161 *U. PA. L. REV.* 1663, 1682-84 (2013); Maurice E. Stucke & Ariel Ezrachi, *When Competition Fails to Optimize Quality: A Look at Search Engines*, 18 *YALE J. L. & TECH.* 70, 77-82 (2016).

¹⁰ See U.S. DEP'T OF JUST., *COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT*, 21-24 (2008).

¹¹ See John M. Newman, *Antitrust in Zero-Price Markets: Applications*, 94 *WASH. U. L. REV.* 49, 77-79 (2016).

¹² See Annie Palmer, *47 Attorneys General Are Investigating Facebook For Antitrust Violations*, CNBC (Oct. 22, 2019), <https://www.cnbc.com/2019/10/22/47-attorneys-general-are-investigating-facebook-for-antitrust-violations.html>; Diane Bartz, *U.S. Justice Department to Open Facebook Antitrust Investigation: Source*, REUTERS (Sept. 25, 2019), <https://www.reuters.com/article/us-facebook-probe-antitrust/justice-department-to-open-facebook-antitrust-investigation-source-idUSKBN1WA35M>; see also Jason Del Rey, *Why Congress's Antitrust Investigation Should Make Big Tech Nervous*, VOX (Feb. 6, 2020), <https://www.vox.com/recode/2020/2/6/21125026/big-tech-congress-antitrust-investigation-amazon-apple-google-facebook>.

To initiate an antitrust proceeding under Section 2 of the Sherman Act, a plaintiff must first show that the defendant has market power. According to the Department of Justice, market power is defined as “a seller’s ability to exercise some control over the price it charges.”¹³ Failure to meet this burden is grounds for dismissal.¹⁴ Put simply, no antitrust action against Facebook can proceed unless regulators can show that the company has market power.

Herein lies the problem: In practice, three challenges make it difficult for regulators to demonstrate the market power of Facebook and other social media behemoths. First, regulatory agencies do not have detailed information on how the platforms use personal data, a reality that prevents governments from understanding how digital platforms operate.¹⁵ Furthermore, because dominant digital platforms like Facebook develop rapidly, regulators find it hard to effectively respond to technological developments.¹⁶ Most importantly, traditional antitrust theories are ill-suited for assessing the digital marketplace because the essence of competition among online networking platforms lies in quality, access to information, and innovation instead of pricing and output.¹⁷

This Article aims to overcome these difficulties by advancing alternative approaches for demonstrating the market power of online networking platforms. Specifically, this study suggests that the information gap approach, the switching costs approach, and the entry barriers approach are more suitable in defining market power of online networking platforms. These approaches are growing in popularity among United States courts; thus, the proposed framework does not present a dramatic break with established practice. Notably, while the study uses Facebook as its main example, the findings of this paper are equally applicable to other online networking platforms.

The Article is organized as follows: Part II begins with an overview of the concept of market power, canvassing three traditional approaches for assessing market power. Part III analyzes the economic characteristics of online networking platforms to determine the suitability of traditional analytical approaches to assess

¹³ See U.S. DEP’T OF JUST., *supra* note 10, at 19.

¹⁴ See, e.g., *Sambreel Holdings v. Facebook, Inc.*, 906 F. Supp. 2d 1070, 1072 (S.D. Cal. 2012); *Commercial Data Servers, Inc. v. Int’l Bus. MacHines Corp.*, 262 F. Supp. 2d 50, 62-63 (S.D.N.Y. 2003); see also *DocMagic, Inc. v. Ellie Mae, Inc.*, 745 F. Supp. 2d 1119, 1136-39 (N.D. Cal. 2010).

¹⁵ Early in 1984, Professor Easterbrook has indicated that antitrust enforcement could be limited because of imperfect information for judges to reasonably predict the effects of decisions. See Frank H. Easterbrook, *Limits of Antitrust*, 63 TEX. L. REV. 1, 3-4 (1984). His point is particularly accurate in judicial regulation of online platforms due to their rapid development.

¹⁶ Professor Posner’s research suggested that courts and antitrust authorities lack sufficient resources to respond to quickly-developed and complex business models of online platforms. See Richard A. Posner, *Antitrust in the New Economy*, at 9 (U. CHI. L. SCH., Working Paper No. 106, 2014).

¹⁷ See Shelanski, *supra* note 9, at 1663, 1705. Due to online networking platforms’ quality-centric nature, scholars suggest that it is critical to consider innovation, instead of price and output, in forming antitrust remedies. See Robert W. Crandall & Charles L. Jackson, *Antitrust in High-Tech Industries*, 38 REV. INDUS. ORG. 319, 358-59 (2011).

Facebook's market power. Part IV reviews recent United States case law on market power in online networking platforms. This body of case law introduces three approaches for evaluating market power in this industry—the information gaps approach, the switching costs approach, and the entry barriers approach. Part IV then assesses the viability of each method of determining Facebook's market power. Part V summarizes the study's main findings and proposes a more viable legal framework for assessing market power in online networking platforms.

II. TRADITIONAL APPROACHES TO ASSESS MARKET POWER

Section 2 of the Sherman Act, 15 U.S.C. § 2, is applied in most antitrust cases involving online platforms. It provides that “[e]very person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several states, or with foreign nations, shall be deemed guilty of a felony”

As highlighted above, to bring a successful section 2 case, claimants are required to prove two elements: the existence of market power and anticompetitive behavior.¹⁸ Consequently, market power is a central element of the antitrust analysis.¹⁹ Indeed, the main goal of antitrust law is to prevent either the formation or the misuse of market power.²⁰ It is important to note that there are legitimate means of obtaining market power that do not violate section 2. In fact, these legitimate means may be economically desirable. Antitrust law prohibits conduct that creates and increases market power that are “not competition on merit.”²¹

Courts and scholars have yet to produce an exact definition of market power. In most Sherman Act cases, courts simply say that a violation requires “a high degree of market power.”²² Violation by attempted-monopolization requires “a lesser but still significant market power.”²³ The Supreme Court defines monopoly power under section 2 as “the power to control prices or exclude competition.”²⁴ For their part, economists define market power as “the ability of a firm (or a group of firms acting jointly) to raise [the] price above the competitive level without losing so

¹⁸ See Newman, *supra* note 11, at 1173; see also HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY, THE LAW OF COMPETITION AND ITS PRACTICE* 107 (2016).

¹⁹ See PHILLIP AREEDA, ET AL., *ANTITRUST ANALYSIS PROBLEMS, TEXTS, AND CASES* 527 (7th ed. 2013); see also HOVENKAMP, *supra* note 18, at 106-07.

²⁰ See Michael S. Jacobs, *Market Power Through Imperfect Information: The Staggering Implications of Eastman Kodak Co. v. Image Technical Services and a Modest Proposal for Limiting Them*, 52 MD. L. REV. 336, 339 (1993); see also HOVENKAMP, *supra* note 18, at 110.

²¹ See A. Douglas Melamed, *Antitrust Law Is Not That Complicated*, 130 HARV. L. REV. F. 163, 166 (2017).

²² See Richard A. Posner & William M. Landes, *Market Power in Antitrust Cases*, 94 HARV. L. REV. 937, 937 (1981).

²³ *Id.*; see also *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 458-60 (1993); *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177 (1965); *Swift & Co. v. United States*, 196 U.S. 375, 396 (1905).

²⁴ *United States v. E.I. du Pont De Nemours & Co.*, 351 U.S. 377, 391 (1956); *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966).

many sales so rapidly that the price increase is unprofitable and must be rescinded.”²⁵ These definitions don’t give precise, predictable guidance to judges or practitioners.

As a result, despite the importance of market power to this area of law, it is incredibly challenging to legally assess a firm’s market power. Therefore, scholars and practitioners have developed frameworks to apply these broad principles to specific antitrust issues.²⁶ This section introduces three approaches traditionally employed by courts to examine the presence or absence of market power.

A. *Direct Effects Approach*

The earliest approach was the direct effects approach, which was proposed to address the difficulties associated with assessing market power. Under this framework, market power may be inferred if anticompetitive harm (direct effects) is found.²⁷ This method was first applied by the Supreme Court in 1899 in *Addyston Pipe & Steel Company v. United States*²⁸ and was subsequently followed by lower courts.²⁹ The approach was expressly adopted by the United States Department of Justice in 2008.³⁰

Under the direct effects approach, market power may be shown in cases where “direct evidence is introduced that the defendants have in fact increased prices above the prevailing level.”³¹ This approach allows courts to sidestep difficult questions about defining the relevant market or measuring the alleged monopolist’s market share.

²⁵ Posner & Landes, *supra* note 22, at 937; *see also* Newman, *supra* note 11, at 1172 (defining market power as “the ability to raise price profitably above the competitive level.”); HOVENKAMP, *supra* note 18, at 106 (defining market power as “the power to raise prices above competitive levels without losing so many sales that the price increase is unprofitable.”).

²⁶ For example, rule of reason is not written in Sections 1 and 2 of the *Sherman Act*, but courts generally recognize and apply this rule to specific cases, to avoid unduly discouraging procompetitive business activities.

²⁷ *See* U.S. DEP’T OF JUST., *supra* note 10, at 30.

²⁸ *Addyston Pipe & Steel Co. v. United States*, 175 U.S. 211 (1899). Yet, this case does not directly explain how one should assess market power. Therefore, it is unclear whether the court has distinguished elements of market power from anticompetitive behaviors.

²⁹ *NCAA v. Bd. of Regents of the Univ. of Okla.*, 468 U.S. 85, 109-11 (1984); *FTC v. Ind. Fed’n of Dentists*, 476 U.S. 447, 460-61 (1986); *Eastman Kodak Co. v. Image Tech. Servs.*, 504 U.S. 451, 465 (1992); *Tops Markets, Inc. v. Quality Markets, Inc.*, 142 F.3d 90, 97-98 (2d Cir. 1998); *Re/Max Int’l v. Realty One, Inc.*, 173 F.3d 995, 1016-19 (6th Cir. 1999); *Toys “R” Us, Inc. v. FTC*, 221 F.3d 928, 937 (7th Cir. 2000); *Pepsico, Inc. v. Coca-Cola Co.*, 315 F.3d 101, 107 (2d Cir. 2002); *Geneva Pharms. Tech. v. Barr Labs., Inc.*, 386 F.3d 485, 500 (2d Cir. 2004).

³⁰ *Ind. Fed’n of Dentists*, 476 U.S. at 460-61; U.S. DEP’T OF JUST., *supra* note 10, at 30.

³¹ *See* John B. Kirkwood, *Market Power and Antitrust Enforcement*, 98 B.U. L. REV. 1169, 1195 (2018).

B. Lerner Index Approach

The Lerner Index was developed in 1934 by Professor Abba Lerner.³² Its premise is that in a competitive market, firms set prices to match their marginal costs.³³ This equilibrium price is treated as the optimal result under perfect competition.³⁴ Firms might prefer to charge a higher price, but if they do, and if the market is perfectly competitive, consumers will just select suppliers who offer similar products at lower prices.³⁵ Following this logic, the Lerner Index approach reasons that monopolists can set a price in excess of marginal costs. Thus, monopoly power can be inferred from the difference, if any, between the price the monopolist charges and its marginal costs.³⁶ The Lerner Index represents this difference as monopoly gain – the profits generated by monopoly position.³⁷ As such, the Lerner Index suggests that the degree of market power can be determined by the following formula:

$$\frac{P - C}{P}$$

wherein P refers to price and C refers to marginal costs.³⁸ The results range between one and zero. The higher the index, the higher market power a firm enjoys.³⁹

Some courts have embraced the Lerner Index approach. In *In re Air Passenger Computer Reservations Systems Antitrust Litigation*, the defendants' Computerized Reservation System (CRS), SABRE, connected airlines and travel agents who "send and receive air transportation booking information, book flights and print out a ticket."⁴⁰ SABRE had ultimately become the largest CRS, servicing "more than 11,000 travel agency locations" and more than 650 airlines and projects.⁴¹ The plaintiffs brought suit against the defendants for violating section 2 of the *Sherman Act*, claiming that the defendants illegally denied them access to SABRE.⁴²

³² See Abba Ptachya Lerner, *The Concept of Monopoly and the Measurement of Monopoly Power*, 1 REV. ECON. STUD. 157, 169 (1934).

³³ Kirkwood, *supra* note 31, at 1181.

³⁴ See F. M. Scherer, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 19 (3rd ed. 1990); see also Louis Kaplow, *On the Relevance of Market Power*, 130 HARV. L. REV. 1303, 1343 (2017); Posner & Landes, *supra* note 23, at 939.

³⁵ See Lawrence J. White, *Market Power: How Does It Arise? How Is It Measured?*, OXFORD HANDBOOK IN MANAGERIAL ECON. (2013), https://www.researchgate.net/publication/254072534_Market_Power_How_Does_it_Arise_How_is_it_Measured

³⁶ See Lerner, *supra* note 32, at 157-61; see also Benjamin Klein, *Market Power in Antitrust: Economic Analysis After Kodak*, 3 S. CT. ECON. REV. 43, 71 (1993); Landes & Posner, *supra* note 22, at 939; Hovenkamp, *supra* note 18, at 108.

³⁷ See Lerner, *supra* note 32, at 165.

³⁸ *Id.* at 169.

³⁹ See HERBERT HOVENKAMP, *PRINCIPLES OF ANTITRUST* 63 (2017).

⁴⁰ *In re Air Passenger Comput. Reservations Sys. Antitrust Litig.*, 694 F. Supp. 1443, 1449 (C.D. Cal. 1988).

⁴¹ *Id.*

⁴² *Id.*

The plaintiffs relied on the Lerner Index approach to show the defendants' market power. They presented evidence that "defendants pric[ed] booking fees above marginal costs."⁴³ Furthermore, the defendants provided different prices to buyers who were in similar positions.⁴⁴ The plaintiffs also noted entry barriers through the low degree of substitutability between SABRE and the competing CRS.⁴⁵ The court accepted the evidence and held that these three allegations were sufficient to infer the defendants' market power.⁴⁶

More recently, in *Kickflip, Inc. v. Facebook, Inc.*, plaintiff Kickflip alleged that Facebook had market power and willfully maintained the power in an anti-competitive manner in their "virtual-currency service" market, Facebook Credits, and "Facebook's social-gaming network" market.⁴⁷ Kickflip asserted that Facebook charged higher fees than other service providers and had at least seventy-five percent of the market share in these three markets, which plaintiff argued was sufficient to constitute market power.⁴⁸ The court concluded that Kickflip's allegations were adequate to infer Facebook's market power in the relevant markets.⁴⁹

C. Market Share Approach

Proposed by Professor Landes and Posner in 1980, the market share approach infers market power by observing market share, market elasticity of demand, and market elasticity of supply.⁵⁰ The key idea is that while high market share tends to generate market power, high market elasticity (of demand or of supply) tends to limit market power.

The first factor considered by the market share approach is the elasticity of demand. In short, high elasticity of demand limits market power. When market elasticity of demand is high, more substitutes are available to consumers, which "limits the firm's market power" because consumers are less dependent on the monopolist's product or service.⁵¹ When elasticity of demand is high, a firm that raises its prices (or lowers the quality of its product) will lose quite a bit of market share.⁵² Conversely, as the elasticity of demand decreases, a firm has an

⁴³ *Id.* at 1461.

⁴⁴ *Id.* at 1461-62.

⁴⁵ *Id.* at 1462-63.

⁴⁶ *Id.* at 1461.

⁴⁷ *Kickflip, Inc. v. Facebook, Inc.*, 999 F. Supp. 2d 677, 682 (D. Del. 2013).

⁴⁸ *Id.* at 688.

⁴⁹ *Id.*

⁵⁰ Posner & Landes, *supra* note 22, at 944-52.

⁵¹ *Id.* at 945.; *see also* HOVENKAMP, *supra* note 18, at 110.

⁵² *See* AUSTAN GOOLSBEE, ET AL., MICROECONOMIES 41 (2016).

increasingly strong incentive to artificially reduce its output to raise prices,⁵³ gaining monopoly profits at insignificant cost to the firm.⁵⁴

Second, high elasticity of demand is also correlated with a high “elasticity of supply” of the competing firms.⁵⁵ This metric also limits market power because, when the monopolist’s competitors have a higher elasticity of supply, they may introduce a larger quantity of goods into the market. As such, once the monopolist raises its price, its competitors can respond quickly by increasing their output to meet the market’s demand for the monopolist’s goods and services.⁵⁶ This drives prices down.

In addition to these measures of elasticity, the market share approach also looks to market share. In a concentrated market, where a single firm possesses a vast majority of the market share, the firm’s competitive fringes, each of which has a small market share, are unlikely to increase production capacity in response to a firm’s price increase.⁵⁷ Consequently, for a firm with a large market share, “it is cheaper to raise price[s] by curtailing output if fringe [firms] have a lower market share since the same percentage increase by the fringe will yield a smaller absolute increase in their output.”⁵⁸

The market share approach of focusing on the correlation of firms’ market share and market power is widely recognized by courts.⁵⁹ The first case that introduced the market share approach into the judicial forum is the 1945 *Alcoa* decision.⁶⁰ Several decisions followed *Alcoa* with slight modifications to meet the needs of specific factual situations.⁶¹ In *Broadway Delivery v. United Parcel Service* (1981) and *Forro Precision, Inc. v. IBM* (1982), courts recognized that a firm with low market share may still have market power if there is adequate evidence to infer the existence of market power.⁶² By contrast, in *Ball Memorial Hospital v. Mutual Hospital Insurance* (1986) and *Indiana Grocery v. Super Valu Stores* (1989), courts held that high market share alone is inadequate to infer market power if the alleged

⁵³ See Posner & Landes, *supra* note 22, at 946.

⁵⁴ *Id.*

⁵⁵ *Id.* at 945.

⁵⁶ See *id.* Professor Landes and Posner noted “if that elasticity were infinite in the relevant range, the elasticity of demand facing firm *i* would also be infinite and *i* would have no market power. . . . Theoretically, it is possible for firm *i* to have no market power even with a 100% market share, because the supply elasticity of potential competitors might be infinite at a price slightly above that charged by firms *i*.” *Id.* at 945-46.

⁵⁷ *Id.* at 947.

⁵⁸ *Id.*

⁵⁹ See HOVENKAMP, *supra* note 39, at 63.

⁶⁰ *United States v. Aluminum Co. of America*, 148 F.2d 416, 424 (2d Cir. 1945). Regarding the issue of how much market share is enough to constitute monopoly power, the court held that 30 percent is far from enough and 60 or 64 percent is debatable. This holding was endorsed by the Supreme Court in *American Tobacco Company v. United States*, 328 U.S. 781, 813 (1946).

⁶¹ *Id.*

⁶² *Broadway Delivery Corp. v. United Postal Serv. of America*, 651 F.2d 122, 127-30 (2d Cir. 1981); *Forro Precision, Inc. v. IBM*, 673 F.2d 1045, 1058-59 (9th Cir. 1982).

monopolist does not block market entry⁶³ or does not have the ability to control output.⁶⁴

Nevertheless, courts still consider market share as a primary criterion in determining the presence or absence of market power,⁶⁵ partly because the market share approach provides courts with a workable method for identifying market power issues. This approach has been applied in the context of online platforms. In *In re eBay Seller Antitrust Litigation*, several consumers challenged eBay and argued that it had violated section 2 of the Sherman Act by abusing monopoly power in the online auction marketplace.⁶⁶ The Plaintiffs used the market share approach to show eBay's market power. They noted that eBay owned more than eighty percent of the market share in the online auction market, which was enough "to establish a prima facie case of market power."⁶⁷ The court accepted this analytical approach.⁶⁸

III. APPLYING TRADITIONAL APPROACHES TO THE ONLINE NETWORKING MARKET

To examine whether the traditional approaches are applicable to measure online networking platforms' market power, this section begins with an explanation of Facebook's business model. It then discusses potential weaknesses of the traditional approaches. Though this Article uses Facebook as its main example, its findings are equally applicable to other similar online networking platforms.

A. Facebook's Business Model

1. Structure: The Two-Sided Market

In order to appreciate the challenge involved in identifying the market power of online networking platforms, it is important to understand their structure. Facebook's business model relies on what economics describe as a "two-sided" market. Such a market is characterized by the interdependent nature of two groups of users demanding distinct yet ultimately related services from a single entity. There are two independent groups to which Facebook provides services. First, users demand social media tools while giving their personal information in return. Facebook then sells this information to advertisers, a second user group. Thus, each group's demand level depends on that of the other: As more customers join Facebook and as the platform accumulates more data on these users, more

⁶³ *Ball Mem'l Hosp., Inc. v. Mut. Hosp. Ins.*, 784 F.2d 1325, 1335 (7th Cir. 1986); *see also* *United States v. Microsoft Corp.*, 253 F.3d 34, 82 (D.C. Cir. 2001); *Harrison Aire, Inc. v. Aerostar Int'l*, 423 F.3d 374, 381 (3d Cir. 2005).

⁶⁴ *Ind. Grocery Inc. v. Super Valu Stores*, 864 F.2d 1409, 1414 (7th Cir. 1989).

⁶⁵ *See, e.g., Weiss v. York Hosp.*, 745 F.2d 786, 827 (3d Cir. 1984); *Movie 1 & 2 v. United Artists Commc'ns.*, 909 F.2d 1245, 1254 (9th Cir. 1990); *United States Anchor Mfg., Inc. v. Rule Indus.*, 7 F.3d 986, 999 (11th Cir. 1993).

⁶⁶ *In re Ebay Seller Antitrust Litigation*, No. 07-01882, 2010 WL 760433, at *6-9 (N. D. Cal. Mar. 4, 2010).

⁶⁷ *Id.* at 15.

⁶⁸ *Id.*

advertisers will flock to Facebook to buy that information in the form of a refined value-added and targeted advertising product.⁶⁹

The following explores Facebook's two-sided market in more detail. In doing so, it highlights the complexities of antitrust investigations involving online networking platforms.

i. Two Sides of the Market: Users and Advertisers

Figure 1 summarizes relationships between the key players in Facebook's two-sided market. At the outset, it must be noted that online networking platforms normally provide more than one service. For example, apart from networking services, Facebook has gaming, publishing, and media services. To simplify the following analysis, this section focuses exclusively on Facebook's social networking services.

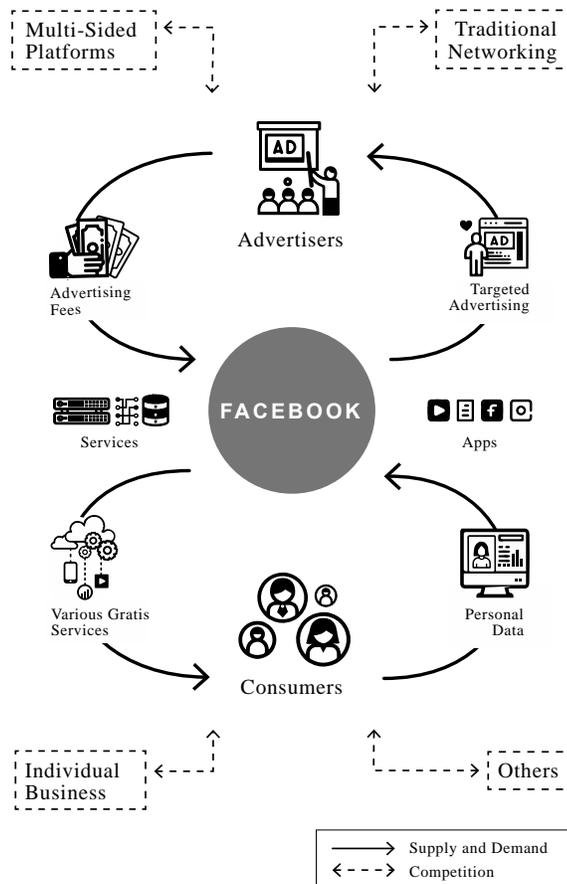


Figure 1: Summary of the relationships between the key players in Facebook's two-sided market.

⁶⁹ See Lapo Filistrucchi, et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. COMPETITION L. & ECON. 293, 296-97 (2014).

Facebook was established in 2004. By the third quarter of 2008, it had over 100 million users. And by the fourth quarter of 2019, the number of users on the platform had soared to nearly 2.5 billion.⁷⁰ Further, Facebook owns another popular online networking platform, Instagram which had 104.4 million U.S. users in 2019.⁷¹ To date, Facebook claims the largest user base in the digital economy's history, and it is rightly considered a dominant firm in the online networking market.⁷²

Facebook's users can use the platform to express themselves by posting text, articles, photos, and videos on their Facebook feeds. Friends of users and the broader public may view this information and provide immediate feedback. In Facebook, by tapping the "Like" button or using other reaction options, users can express their thoughts toward their friend's post in an effortless way. In addition, users can create or join groups whose members have personal ties,⁷³ similar careers,⁷⁴ or similar interests.⁷⁵

To broaden its user base, Facebook has launched various complementary services. For example, Facebook allows game developers to design interactive games for the platform, which helps the platform facilitate personal interactions between users.⁷⁶ Beyond social networking, Facebook can now also claim a footprint in career services, and it continues to grow its media arm.⁷⁷ In fact, research shows that 62 percent of adults in the United States use social media as their main source of news.⁷⁸ The majority of these adults get their news stories from Facebook.⁷⁹

Facebook's success on the user side corresponds to its substantial success on the advertisement side of the business. Facebook efficiently identifies suitable users

⁷⁰ See *Facebook Usage in the United States*, STATISTA, at 55 (2021).

⁷¹ See *Forecast of the Number of Instagram Users in the United States from 2017 to 2025*, STATISTA (Jan. 2021).

⁷² See SCOTT GALLOWAY, *THE FOUR: THE HIDDEN DNA OF AMAZON, APPLE, FACEBOOK, AND GOOGLE* 99 (2017); Khan, *supra* note 2, at 1001.

⁷³ For example, Washington University in St. Louis Alumni Association initiated a Facebook group named Washington University Alumni Association. The group had 17 thousand followers in 2020. In this group, most follower are alumni of Washington University. By joining this group, followers can follow on the latest news about the University.

⁷⁴ Regarding career groups, examples include the New York State Bar Association and the American Medical Association (AMA).

⁷⁵ Countless interest groups are available on Facebook. Groups range from sports (e.g. NBA and MLB) to fishing and flower arrangements.

⁷⁶ See Kuo-Hsiang Chen, et al., *The Functional and Usable Appeal of Facebook SNS Games*, 22 *INTERNET RES.* 467, 477 (2012).

⁷⁷ See *Do the Most Meaningful Work of Your Career*, FACEBOOK, <https://www.facebook.com/careers/> (last visited May 3, 2021).

⁷⁸ See Jeffrey Gottfried & Elisa Shearer, *News Use Across Social Media Platforms 2016*, PEW RESEARCH CENTER (May 26, 2016), <https://www.journalism.org/2016/05/26/news-use-across-social-media-platforms-2016/>.

⁷⁹ *Id.*

for advertisers through big data analysis.⁸⁰ Indeed, the company captures all user interactions on the platform. Additionally, third-party websites can install Facebook's Pixel, which allows Facebook to track the browsing history of its users on those third-party websites.⁸¹ Facebook's "access to this data . . . enable[s] it to more precisely target Facebook users when selling ads, [thus] increasing ad revenues."⁸² Ultimately, Facebook's comprehensive collection of users' personal data provides limitless opportunities for data analytics. The processed data is commercialized on the other side of market—the advertising sector.⁸³

Facebook's vast data troves, along with its advanced data analysis tools, enable advertisers to expand their businesses by accessing consumers. Thus, advertisers have gravitated to Facebook, providing the company with an enormous and consistent flow of advertising revenue. As a result, Facebook can cover the costs of its free services while continuously developing new products for its users.⁸⁴ This business model further strengthens Facebook's competitive advantage over its competitors.

In summary, Facebook provides value on both the user and advertiser sides of the market. On the user side, it presents relevant advertisements to consumers for consumption purposes and provides various services to enrich users' lives. Through its big data analysis, Facebook can analyze a considerable volume of information in a rapid manner and subsequently provide personalized information to each consumer.⁸⁵ This service reduces information gaps within the market and lowers the costs associated with locating the information.⁸⁶ Accordingly, consumers are more willing to consume goods and services.⁸⁷ Eventually, consumer welfare is

⁸⁰ See President's Council of Advisors on Sci. and Tech., Exec. Office of the President [hereinafter President's Council], *Big Data and Privacy: A Technological Perspective*, 28-30 (2014); see also Galloway, *supra* note 72 at 196-200.

⁸¹ See Diana Srinivasan, *The Antitrust Case Against Facebook: A Monopolist's Journey Towards Pervasive Surveillance in Spite of Consumers' Preference for Privacy*, 16 BERKELEY BUS. L. J. 39, 71 (2019).

⁸² See Khan, *supra* note 1, at 1004.

⁸³ See Evgeny Morozov, *Tech Titans Are Busy Privatizing Our Data*, GUARDIAN (Apr. 24, 2016), <https://www.theguardian.com/commentisfree/2016/apr/24/the-new-feudalism-silicon-valley-overlords-advertising-necessary-evil>.

⁸⁴ See Frieden, *supra* note 2, at 723-25.

⁸⁵ See President's Council, *supra* note 80, at 28-30.

⁸⁶ See Lobel, *supra* note at 1 (citing Ronald Coase, *The Problem of Social Cost* 3J. L. & ECON. 1, 15-19 (1960)). Professor Coase concluded that the inherent cost of market transactions is unavoidable in the real world because "in order to carry out a market transaction it is necessary to discover who it is that one wishes to deal with, to inform people that one wishes to deal and on what terms, to conduct negotiations leading up to a bargain, to draw up the contract, to undertake the inspection needed to make sure that the terms of the contract are being observed, and so on."

⁸⁷ This concept was called Lemon Market Theory, proposed by Professor Akerlof in 1970. The theory identified several correlations in quality, uncertainty, and market selection. In a market where product quality information is not readily available, sellers tend to sell lower-quality products since they realize that selling inferior products merely harms the market as a whole rather than individual sellers. Knowing this market reality, consumers tend to cut the price they are willing to pay for the products. The resulting dishonesty drives legitimate sellers with higher cost out of the market. See

enhanced to some extent through the participation in the digital marketplace.⁸⁸ On the advertiser side, Facebook serves as an intermediary between users and advertisers and it reduces transaction costs for both parties.⁸⁹ Facebook's ultimate value to advertisers lies in its ability to create dedicated channels for reaching specific user segments.

ii. Exterior Competition and Expansion

It is important to briefly consider Facebook's competitive environment, which cannot be ignored in a market power analysis.

The online networking market consists of online networking service companies. While Facebook is the largest player in the market, it is challenged by three forces. First, the company is forced to compete with traditional one-sided platforms.⁹⁰ For example, Facebook is also in competition with billboard companies, television ad space, newspapers, and other kind of networking events for advertisement services. Facebook's networking service cannot entirely replace traditional face-to-face networking events,⁹¹ such as academic forums, graduation ceremonies, and private parties because in-person connections generate different emotional reactions. Therefore, firms that provide in-person networking services still dominate some parts of market.

Second, Facebook competes with other multi-sided platforms. The platforms with large userbases, such as Google and Apple, can develop networking services to compete with Facebook. Typically, these competitors capture new markets by injecting capital from other successful ventures.⁹² For instance, Google's main business initially consisted of online searches and advertising services, with consumer-facing productivity software lagging behind. Now, Google can use its income from search to subsidize various software businesses that compete with incumbent software firms like Microsoft.⁹³

George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q. J. ECON. 488, 495-96 (1970). The regulatory implication of the Lemon Market Theory is that in order to avoid inverse selection incurred from the uncertainty of product quality, regulators must take some measures such as mandatory disclosure which makes information readily available to purchasers. As consumers feel more confident with products as a result of open information on price and quality, they become more willing to purchase products at a reasonable market price, which encourages more sellers to enter the market, and eventually leads to a more competitive market.

⁸⁸ See Frieden, *supra* note 2, at 722.

⁸⁹ See David S. Evans, *Competition and Regulatory Policy for Multi-Sided Platforms with Applications to the Web Economy*, 2 *Concurrences* 57, 58 (2008).

⁹⁰ See *id.* at 62.

⁹¹ See Kirsty Young, *Social Ties, Social Networks and the Facebook Experience*, 9 *INT'L J. EMERGING TECH. & SOC'Y* 20, 31 (2011); see also Anabel Quan-Haase & Alyson L. Young, *Uses and Gratifications of Social Media: A Comparison of Facebook and Instant Messaging*, 30 *BULL. SCI. TECH. SOC'Y* 350, 358-59 (2010).

⁹² See Evans, *supra* note 89, at 15.

⁹³ *Id.*

Third, other businesses that provide analogous services may impose a competitive threat on Facebook.⁹⁴ For example, Quora was established in 2009, providing question-and-answer interface for askers and answerers.⁹⁵ In 2018, the company earned \$8 million⁹⁶ and had more than “300 million active monthly users.”⁹⁷ Quora’s service may progressively take Facebook’s users who join online networking platforms for learning purposes.

As a dominant player in the market, Facebook endeavors to expand its business into complementary markets to capture even more users. Of course, Facebook’s profits “increase as [its] networks grow.”⁹⁸ Notably, Facebook acquired Instagram in 2012 in part to gain access to Instagram’s photo-sharing functions.⁹⁹ As a result of this merger, users can link their Facebook and Instagram activities. For example, users can view Instagram photos on Facebook. The acquisition eliminated technical barriers between the two applications and ultimately enhanced their value.

Facebook did not end its expansion when it purchased Instagram. A study highlights that between 2005 to 2019, Facebook completed at least 72 acquisitions including photo management services (Divvyshot), information graphics platforms (Daytum), private conversations/forums (Sharegrove), travel recommendation tools (Nextstop), and communication tools (WhatsApp).¹⁰⁰ These acquisitions of complementary applications have diversified Facebook’s portfolio of products and attracted a diverse group of users. This significantly enhanced the company’s brand value.

2. Economic Effects in a Two-Sided Market

When courts employ different approaches to assessing market power, they consider a number of various economic effects. As such, this section considers the economic effects of a two-sided market. In brief, such a market is characterized by 1) interconnected demand between user groups which complicates simple inquiries, 2) substantial fixed-cost investments resulting in high market concentrations, 3) high barriers to entry, and 4) low information transparency making it hard for users

⁹⁴ *Id.* at 16.

⁹⁵ See Pankul Bindal, *Introduction to Quora and How to Use it in Right Way*, TECH BLICKS (Dec. 18, 2019), <https://techblicks.com/introduction-to-quora-and-how-to-use-quora-in-right-way/>.

⁹⁶ *Id.*

⁹⁷ See Ginny Marvin, *Quora Introduces Broad Targeting, Says Audience Hits 300 Million Monthly Users*, SEARCH ENGINE LAND (Mar. 20, 2021), <https://searchengineland.com/quora-introduces-broad-targeting-says-audience-hits-300-million-monthly-users-305517>

⁹⁸ See ALEX MOAZED & NICHOLAS L. JOHNSON, MODERN MONOPOLIES: WHAT IT TAKES TO DOMINATE THE 21ST CENTURY ECONOMY 95 (2016).

⁹⁹ See Salvador Rodriguez, *As Calls Grow to Split Up Facebook, Employees Who Were There for the Instagram Acquisition Explain Why the Deal Happened*, CNBC (Sept. 24, 2019), <https://www.cnbc.com/2019/09/24/facebook-bought-instagram-because-it-was-scared-of-twitter-and-google.html>.

¹⁰⁰ See Ramzeen A V, *72 Facebook Acquisitions – The Complete List (2020)!*, TECHWYSE (Jun. 17, 2019), <https://www.techwyse.com/blog/infographics/facebook-acquisitions-the-complete-list-infographic/>.

to understand their costs and alternative products. The features are decisive to determine what approaches are best suitable for assessing digital platforms' market power.

i. Interconnected Demand

As noted above, Facebook is a two-sided advertising market. The first distinct economic characteristic of two-sided markets is the interdependent nature of two groups of users: one group's demand level depends on the demand level of the other.¹⁰¹ In this system, advertisers demand more users to see their ads. The two sides are inextricably linked, a phenomenon which scholars call "indirect network effects."¹⁰² In other words, due to indirect network effects, advertisers' willingness to advertise on Facebook depends on the number of people using Facebook. Facebook capitalizes on this interconnected demand.¹⁰³

Interconnected demand balances both sides' benefits and costs. In traditional two-sided markets, operators can subsidize one side by using the profits earned from the other.¹⁰⁴ Due to indirect network effects, any decision on one side may adversely affect the other side.¹⁰⁵ For instance, a change in consumer demand whereby fewer young people use Facebook reduces advertiser demand for the platform – in this way each side of the two-sided platform effects the other.

This interconnected demand complicates the antitrust inquiry. In assessing the anticompetitive effects of the two-sided market, it is important to consider the two sides as a comprehensive market and not as two individual unique markets. This is because the two sides are deeply interdependent. Indeed, this is not a novel argument. In one leading case involving payment card networks, *Ohio v. American Express*, the Supreme Court held that courts should examine the anti- and pro-competitive effects on merchants and cardholders (the two sides of Amex's payment card market) simultaneously because indirect network effect links the merchants and cardholders together.¹⁰⁶ A credit card is "more valuable to cardholders when more merchants accept it, and is more valuable to merchants when more cardholders use it."¹⁰⁷ The same theory can apply to Facebook—the platform is more valuable to advertisers when more consumers join it, and is more beneficial to consumers when more advertisers employ it.

When assessing Facebook's market power, authorities should also note the two-sided nature of its cost structure.¹⁰⁸ Often, the user group is charged nothing, while

¹⁰¹ See Filistrucchi, et al., *supra* note 2, at 296-97.

¹⁰² See Patrick R. Ward, *Testing for Multisided Platform Effects in Antitrust Market Definition*, 84 U. CHI. L. REV. 2059, 2075 (2017) (citing Filistrucchi, et al., *supra* note 2, at 296-97).

¹⁰³ *Id.* at 2087.

¹⁰⁴ See Evans, *supra* note 89, at 41; see also Peter Alexiadis, *Forging a European Competition Policy Response to Online Platforms*, 18 BUS. L. INT'L 91, 95 (2017).

¹⁰⁵ See Alexiadis, *supra* note 104, at 96; Evans, *supra* note 89, at 14.

¹⁰⁶ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285-87 (2018).

¹⁰⁷ *Id.* at 2281.

¹⁰⁸ See Evans, *supra* note 89, at 20.

revenues are generated from the advertiser group. Consequently, traditional antitrust analytical frameworks need to consider the features of online networking platforms.¹⁰⁹

ii. High Market Concentration

Some industries require substantial fixed-cost investments. Transportation, energy, and financial services are all great examples.¹¹⁰ In these industries, firms must acquire huge amounts of capital to get off the ground. But although these industries have high startup costs, they often have lower marginal costs associated with servicing each new customer.¹¹¹ Therefore, these can recover their start-up costs if and only if they reach a certain level of market share.¹¹² This promotes highly concentrated markets. After all, few firms can dedicate enough capital to develop a presence in these markets.¹¹³

Online networking platforms fit in this category. This industry has high market concentration because it requires “high initial investment costs” but platforms incur “very low incremental costs . . . when adding [new] users.”¹¹⁴ Platforms attract and retain users by providing personalized services. Tailoring the platform’s services requires significant start-up costs, including collecting users’ personal data, developing complex data analysis capabilities, and acquiring sophisticated, custom-built equipment to develop data analysis systems.¹¹⁵ Indeed, new online networking platforms incur many fixed costs throughout this endeavor.¹¹⁶ Accordingly, the platforms need to acquire a large number of users to split the fixed costs.¹¹⁷

¹⁰⁹ *Id.* at 31.

¹¹⁰ See, e.g., George J. Benston, *Economies of Scale of Financial Institutions*, 4 J. MONEY CREDIT & BANKING 312 (1972); Laurits R. Christensen & William H. Greene, *Economies of Scale in U.S. Electric Power Generation*, 84 J. POL. ECON. 655 (1976); Douglas W. Caves, et al., *Economies of Density Versus Economies of Scale: Why Trunk and Local Service Airline Costs Differ*, 15 RAND J. ECON. 471 (1984); Aubrey Silberston, *Economies of Scale in Theory and Practice*, 82 ECON. J. 369 (1972); Rajiv D. Banker, et al., *Evidence on Economies of Scale in Software Development*, 36 INFORMATION & SOFTWARE TECH. 275 (1994).

¹¹¹ See W. KIP VISCUSI, ET AL., *ECONOMICS OF REGULATION AND ANTITRUST* 375 (2018).

¹¹² See *id.*; see generally GOOLSBEE, ET AL., *supra* note 52, at 273; JOE S. BAIN, *BARRIERS TO NEW COMPETITION* 53 (1956) (concluding that “significant economies of scale to the plant or firm exist if its minimum optimal scale is a significant fraction of the total scale or capacity of the industry, and if, in addition, unit costs are significantly elevated at much smaller than minimum optimal scale.”); PHILLIP AREEDA, ET AL., *ANTITRUST ANALYSIS PROBLEMS, TEXTS, AND CASES* 9, 24-25 (7th ed. 2013); Jeffrey L. Harrison, *Instrumental Theory of Market Power and Antitrust Policy*, 59 SMU L. REV. 1673, 1679 (2006).

¹¹³ *Id.*

¹¹⁴ See Frieden, *supra* note 2, at 724 (citing John M. Newman, *Anticompetitive Product Design in the New Economy*, 39 FLA. ST. U. L. REV. 681, 687 (2012)); see also BAIN, *supra* note 112, at 110 (noting that “economies of scale as a rationale for existing concentration.”).

¹¹⁵ See PRESIDENT’S COUNCIL, *supra* note 80, at 24-26; see also VISCUSI, et al., *supra* note 111, at 375.

¹¹⁶ See Evans, *supra* note 89, at 46.

¹¹⁷ See LUIGI ZINGALES ET AL., *STIGLER COMMITTEE ON DIGITAL PLATFORMS: POLICY BRIEF* 7-8 (Sept. 2019).

The ability of Facebook to provide highly personalized services allows it to achieve economies of scale.¹¹⁸ A better understanding of its users through big data analysis gives Facebook two competitive advantages. First, on the user side, knowing user preferences allows Facebook to offer personalized services, which translates into increased reliance on Facebook by users and advertisers.¹¹⁹ Repeat interactions with users allow Facebook to further refine its services.¹²⁰ On the advertisement side, reaching a large user base via personalized strategies increases revenues¹²¹ and incentivizes advertisers to invest in Facebook. Additional investments enhance the platform's capacity to improve services. Second, due to network effects, once Facebook reaches a "critical mass of popularity, non-users see the advantages in joining the bandwagon, further enhancing the comparative attractiveness of the most popular platform operator vis-à-vis other competitors and options."¹²² Ultimately, these positive feedback effects allow Facebook to become even bigger.¹²³

Conventional wisdom holds that high market concentration harms competition when a company conducts anticompetitive behaviors to gain or maintain market concentration. Therefore, market concentration is commonly considered by courts in determining whether antitrust law has been violated. It is unsurprising that under traditional antitrust theories, Facebook's high concentration will lead to a conclusion that the online networking market is suffering from little competition.

However, a careful assessment of the online networking market allows one to appreciate the complexities surrounding high market concentration. For many companies such as Facebook, high market concentration is inevitable due to the economic scale requirement. Economies of scale compel online networking firms to acquire a substantial market share to remain competitive. Furthermore, network effects lead companies such as Facebook to become even larger. As Facebook's large market share is an inevitable result of the online networking market, this market feature, standing alone, doesn't demonstrate Facebook's market power.

¹¹⁸ See Gail Moody-Byrd, *Leading the Explosive Growth of Social Media through Data-Driven Strategies* (Mar. 1, 2018), <https://blog.sprinklr.com/sap-data-driven-strategies/>; see also MOAZED & JOHNSON, *supra* note 98, at 100.

¹¹⁹ See *Personalization: Opportunities, Pitfalls and How to Get it Right*, FACEBOOK (Jan. 31, 2020), <https://www.facebook.com/business/news/personalization-opportunities-pitfalls-and-how-to-get-it-right>.

¹²⁰ See Evans, *supra* note 89, at 24.

¹²¹ *Id.* For evolution of targeted advertisement, see Tyson Quick, *The Evolution of Advertising & How Personalization Improved Over Time*, INSTAPAGE, <https://instapage.com/blog/evolution-of-advertising> (last updated Nov. 4, 2020).

¹²² See Frieden, *supra* note 2, at 725 (citing Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 RAND J. ECON. 70, 70 (1985); Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 425 (1985); Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479, 546 (1998)).

¹²³ *Id.*

iii. High Entry Barriers

Entry barriers are an essential factor for assessing the degree of competition in a market. Competition is strong when there are few entry barriers because potential entrants can easily engage consumers and push down the price of goods and services. In contrast, market competition is weak where entry barriers are high. This is because without potential entrants, the dominant firms can manipulate the price without losing any business.¹²⁴ Therefore, the level of entry barriers in online networking markets may be used as a reliable indicator of market power.

Online networking platforms are data-driven, and this creates a substantial barrier to entering the market.¹²⁵ Thus, it is essential for these businesses to capture and analyze large data sets in a highly efficient manner.¹²⁶ Facebook, as one of the earliest market entrants, has a strong position in the market.¹²⁷ Latecomers are disadvantaged because they might not be able to attract users from Facebook, which can take advantage of network effects that newcomers cannot. Smaller competitors are also disadvantaged in this contest because they lack the resources necessary to run data mining operations. Without sizable datasets, these firms are less attractive to advertisers and cannot compete with Facebook.¹²⁸

Entry barriers extend to complementary markets. Because Facebook has the largest user base among existing online networking platforms, a majority of independent developers or producers closely rely on Facebook to reach new customers. The high reliance on Facebook may deter independent application developers from entering platform-adjacent markets. Due to “the constant risk that [Facebook] will foreclose access, appropriate their business value, or both, producers may be less likely to secure funding and develop their product in the first place.”¹²⁹ As a result, “[a]nticipating platform discrimination or appropriation will lower expected rewards, depressing the incentive to invest.”¹³⁰ This Facebook-centered ecosystem may chill innovation in the long term,¹³¹ discouraging prospective entrants from entering the online networking market.

iv. Low Information Transparency

Consumers who rely on Facebook seem to believe that they enjoy various services for free. Without direct payments being sent to Facebook, “consumers may assume they pay nothing for opportunities to participate in beneficial

¹²⁴ *United States v. Microsoft Corp.*, 253 F.3d 34, 82 (D.C. Cir. 2001).

¹²⁵ *See Frieden, supra* note 2, at 717.

¹²⁶ *See PRESIDENT’S COUNCIL, supra* note 80, at 19.

¹²⁷ *See Frieden, supra* note 2, at 715-16; *see also* Bamberger & Lobel, *supra* note 9, at 1067-68; *see also* Shelanski, *supra* note 9, at 1682.

¹²⁸ *See* Daniel L. Rubinfeld & Michal S. Gal, *Access Barriers to Big Data*, 59 ARIZ. L. REV. 339, 355-56 (2017).

¹²⁹ *See* Khan, *supra* note 1, at 1008.

¹³⁰ *See id.* at 1009.

¹³¹ *See id.* at 1008.

transactions.”¹³² This belief is erroneous. In reality, they give out their “information about their online behavior, location, purchases, searches, website visits, and other activities”¹³³ in exchange for Facebook’s services.

According to Rob Frieden’s research, “most consumers may not fully understand both the short- and long-term consequences of intermediary transactions.”¹³⁴ Although Facebook publishes its data policies online, it is still unclear whether consumers really understand these terms and conditions. Some terms are quite broad, including the terms “use,” “measurement,” and “analytics,” each of which can hardly be defined by law experts, not to mention laypeople.¹³⁵ For example, the term “use” may include or exclude for-profit purposes.

Frieden’s research identifies this inherent transparency problem. For example, vague and non-negotiable terms regarding data authorization give platforms a broad right to use consumers’ data. Few of these terms restrict the use of data or give platforms responsibilities to their users.¹³⁶ Additionally, some platforms may allow “data acquisition and mining opportunities, directly or through third parties, far exceeding the ample options they have reserved.”¹³⁷ Finally, platforms may not report or admit data breaches and other privacy violations in a timely manner.¹³⁸ Although users may receive information regarding data breaches from other sources, there are few opportunities to learn about such occurrences.

Economists believe that a buyer’s ability to freely switch among sellers can prevent sellers from setting monopolistic prices. When a seller’s price is higher than the price offered by others, buyers will switch to other sellers. Since information transparency in the online networking market is quite low, this reality disrupts the switching principle. After all, users cannot measure the quality of Facebook’s services or their fair market value. Even if they could do so, they may be unwilling to switch because switching platforms means losing access to their Facebook friends.

B. Limitations of Traditional Approaches to the Online Networking Market

So far, this section has described the traditional approaches for assessing market power, explained how Facebook’s business operates as a two-sided market, and identified some relevant economic characteristics of such a market. This was

¹³² Frieden, *supra* note 2, at 723.

¹³³ *Id.* at 718 (citing Shelanski, *supra* note 9, at 1678).

¹³⁴ See Frieden, *supra* note 2, at 725, 732-33 (citing Morozov, *Tech Titans Are Busy Privatising Our Data*, GOLDSTEIN REPORT (Apr. 24, 2016), <https://goldsteinreport.com/tech-titans-are-busy-privatising-our-data-by-evgeny-morozov/>).

¹³⁵ See *Data Policy*, FACEBOOK, <https://www.facebook.com/policy.php> (last visited Jun. 29, 2020).

¹³⁶ See Frieden, *supra* note 2, at 729 (citing Omer Tene & Jules Polonetsky, *Big Data for All: Privacy and User Control in the Age of Analytics*, 11 NW. J. TECH. & INTELL. PROP. 239, 260-61 (2013)).

¹³⁷ See Frieden, *supra* note 2, at 729.

¹³⁸ *Id.* at 730.

necessary for the following, which explains why traditional approaches are limited in the face of a two-sided market such as Facebook's.

1. Direct Effects Approach

Unlike other approaches, the direct effects approach does not require plaintiffs to define relevant market and measure a firm's market share. Although this approach was promising, courts have rejected it "because to [accept it] would effectively collapse the two elements of the violation—power and conduct—into one."¹³⁹ Courts agree that market power and anticompetitive effects are two distinctive elements which must be demonstrated separately by the interested party. The direct effects approach goes against this consensus, making it an unpopular framework in the eyes of the judiciary.

2. Lerner Index Approach

The Lerner Index approach is ill-suited for assessing Facebook's market power. As a reminder, this approach identifies market power by looking at whether a firm sets prices above marginal costs. Facebook provides its services at no cost to consumers. Furthermore, marginal costs associated with serving additional users are nearly zero.¹⁴⁰ This makes it impossible to infer market power with reference to price and cost correlations. Moreover, this approach presumes a perfect market environment. This ideal version of the marketplace clashes with the key economic features of online networking platforms. As noted above, few players provide differentiated and quality-centric services. Additionally, information transparency is less common in the online networking marketplace, meaning that consumers have a hard time understanding the costs they incur by using the platform.

3. Market Share Approach

Despite the widespread adoption of the market share approach, it has several drawbacks, particularly in the context of online networking platforms. First, the application of this approach relies heavily on the definition of the market.¹⁴¹ an overly broad or overly narrow market definition may lead courts to understate or overstate the firm's market power.¹⁴² Defining the online networking market is extraordinarily difficult because online services do not have clear products. For example, one may regard Facebooks' multiple digital services as a unique service, thereby defining

¹³⁹ See Mark R. Patterson, *Google and Search-Engine Market Power*, HARV. J. L. & TECH. 1, 7 (2013).

¹⁴⁰ See ZINGALES ET AL., *supra* note 117, at 3.

¹⁴¹ According to the Ninth Circuit, to prove the Defendant's market power, the Plaintiffs must first "define the relevant market," and then demonstrate that "the defendant owns a dominant share of that market," along with whether "there are significant barriers to entry and [whether] existing competitors lack the capacity to increase their output in the short run." *Rebel Oil Co. v. Atlantic Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995).

¹⁴² See Herbert Hovenkamp, *Response: Markets in IP and Antitrust*, 100 GEO. L. J. 2133, 2146 (2012).

Facebook services as a market. Following this viewpoint, Facebook has 100 percent of market share and strong market power in the market. However, this theory may overstate Facebook's market power because this viewpoint ignores the fact that Facebook's services are still facing competition from one-sided platforms or other multi-sided platforms.

Moreover, what criteria should be used to measure Facebook's market share? While the number of users and revenue have been adopted to measure Facebook's market share, the value of these criteria is still debated in the literature.¹⁴³ Lastly, applying this approach to Facebook complicates the process because courts must determine market ratios, elasticity of demand and supply, the possibility of entry, in addition to other factors regarding other platforms' ability to control output.¹⁴⁴ Collecting and analyzing the necessary data on these factors from all market participants is not only technically difficult, but also incredibly costly. It is no wonder, then, that courts have tried to develop new approaches for assessing market power in the social media and tech contexts.

IV. NEW APPROACHES TO ASSESS MARKET POWER IN THE ONLINE NETWORKING PLATFORMS

A. *Information Gaps Approach*

The Supreme Court presented the information gaps approach in the 1992 *Kodak* case whereby the Court clarified whether a firm with insignificant market share could have market power.¹⁴⁵ Instead of looking at the market share, this approach considers "the presence of 'difficult and costly' information gaps and 'very high switching costs.'"¹⁴⁶ After all, perfect competition assumes that "all resources are completely mobile, or alternatively, all sellers have the same access to needed inputs," and "all participants in the market have good knowledge about price, output and other information about the market."¹⁴⁷

Information gaps occur when consumers do not know information that is essential for choosing between firms, or when they have little access to such information.¹⁴⁸ This overturns the presumption that all information is readily accessible. Information gaps "prevent consumers from obtaining perfect knowledge about that market, causing the market to move further away from the

¹⁴³ See HOVENKAMP, *supra* note 39, at 59-62.

¹⁴⁴ See Kirkwood, *supra* note 31, at 1207-08.

¹⁴⁵ *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 112 S. Ct. 2072, 2085, 2087 (1992). A similar case is *Commercial Data Servers, Inc. (CDC) v. IBM* where the plaintiff relied on the information gap approach to show IBM's monopoly power. The Court concluded that CDC did not present convincing evidence to demonstrate that IBM's customers had difficulties in making "informed purchase decisions" due to "high information costs." Thus, CDC's claims were groundless. See 262 F. Supp. 2d 50, 54, 55, 67-71 (S.D.N.Y. 2003).

¹⁴⁶ See Jacobs, *supra* note 20, at 344-45 (quoting *Kodak* 112 S. Ct. at 2085-87).

¹⁴⁷ See HERBERT HOVENKAMP, *ECONOMICS AND FEDERAL ANTITRUST LAW*, 4-5 (5th ed. 2016).

¹⁴⁸ See Jacobs, *supra* note 20, at 344-48.

competitive ideal.”¹⁴⁹ And the *Kodak* Court considered the existence of such gaps to be a reliable indicator of market power.

There are several ways by which information gaps may result in market power. First, firms can shield themselves from market competition by intentionally providing inadequate, incorrect, incomplete, and even misleading information about market conditions to consumers.¹⁵⁰ The misleading information prevents consumers from making informed decisions, and further distorts the market’s competitive function—permitting incumbent firms to cement their influence in the market.

Second, when consumers find it very costly to access information about suppliers and their products, consumers may not receive sufficient information to understand the costs of using the platform or of switching platforms. As such, firms may take advantage of consumers’ lack of adequate market information by raising prices, knowing that consumers will be unable to switch suppliers or reduce consumption.¹⁵¹

Lastly, many platforms provide what economists call a “credence product” which is when consumers cannot evaluate the product’s quality, either before or after their purchase.¹⁵² For example, Facebook’s services are based on information, such as users’ personal background, business promotion, and news. Users cannot precisely evaluate the value of this information, even after joining the platform.¹⁵³ Because users cannot tell whether Facebook’s information is better than its competitors, they have no reason to switch to other platforms—even if those platforms provide better information services.

The analysis is further complicated by platforms’ rapid development. In recent years, online networking platforms have begun developing multi-function applications. Each platform endeavors to develop its own core businesses and integrated synergies. This means that it is extremely difficult to compare functions of different platforms. Without such comparisons, competition among the platforms is weakened.

¹⁴⁹ *Id.* at 346; see also MARK R. PATTERSON, ANTITRUST LAW IN THE NEW ECONOMY: GOOGLE, YELP, LIBOR, AND THE CONTROL OF INFORMATION 46-49 (2017).

¹⁵⁰ See Jacobs, *supra* note 20, at 346 (citing Howard Beales, et al., *The Efficient Regulation of Consumer Information* 24 J. L. & ECON. 491, 492 (1981)); see also PATTERSON, *supra* note 149, at 119 (suggesting that manipulation of information is a mean to exclude competition. This can happen in any of the following ways: “the provision of false or misleading information, the selective provision of information, distortion of the manner in which information is presented, or the denial of information content to those who would use it in decision-making.”).

¹⁵¹ See Patterson, *supra* note 139, at 11-15.

¹⁵² *Id.* at 11. Economists have distinguished three types of products based on the ability of consumers to evaluate them quantitatively. These goods and services are search products, experience products, and credence products. Search products refer to products whose quality can be evaluated by searching relevant information before the purchase. If the quality can be evaluated only after the purchase, the product is known as an experience product.

¹⁵³ See PATTERSON, *supra* note 149, at 69, 81 (concluding that “much information is an experience or credence good.”).

One may argue that obtaining information regarding online networking platforms is effortless because online search engines display search results within milliseconds. This argument, however, is only partially correct, because the ease of accessing information does not necessarily mean that one is accessing useful or accurate information. To collect useful information from search engines, one must use appropriate keywords, which poses an obstacle for the majority of internet users.¹⁵⁴ Further, specific information may not be available even if one tries to search online. As such, online search engines only partly solve the search problem.

In summary, information gaps, unreasonably high search costs, and the nature of Facebook's products hinder the ability of users to evaluate the quality of services. As users are unable to evaluate service quality, they lose opportunities to leave Facebook to other platforms, which plays an essential role in competition among competing platforms. This inability allows platforms to provide inferior services without losing businesses. Thus, market power may be inferred from situations where users are misled about service quality through the use of incorrect or incomplete information. For example, incomplete information about data use policy might allow Facebook to gather more personal data than previously known without triggering users' attention.

B. *Switching Costs Approach*

The switching costs theory was also formally adopted in the 1992 *Kodak* case.¹⁵⁵ Nine years later, it was used by the D.C. Circuit in the *Microsoft* decision.¹⁵⁶ The approach used in *Kodak* and *Microsoft* has since been further refined by lower courts in subsequent decisions.¹⁵⁷

As described by economists, switching costs (also called lock-in effects) are generally defined as the "costs that are incurred when switching from one supplier of a particular good or service to another supplier, including money costs and the

¹⁵⁴ *Id.* at 68.

¹⁵⁵ *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 112 S. Ct. 2072, 2085, 2087 (1992).

¹⁵⁶ *United States v. Microsoft Corp.*, 253 F. 3d 34 (D.C. Cir. 2001).

¹⁵⁷ *E.g.*, *Universal Avionics Sys. Corp. v. Rockwell Int'l Corp.*, 184 F. Supp. 2d 947, 955 (D. Ariz. 2001) (noting that "[t]he following four factors must *all* be satisfied in order to conclude that a *Kodak* lock-in market exists: 1. [h]igh 'switching costs': [a] substantial number of customers must have made brand-specific investments that still have a useful life but that are substantially unrecoverable if they shift to other brands; 2. [h]igh 'information costs': [a] substantial number of those customers must be too ignorant of 'lifecycle' prices to protect themselves by judicious interbrand comparisons or by contract before they become locked in; 3. [a]bility to exploit ignorant customers: [t]he knowledgeable customers who can protect themselves must either be unimportant to the defendant or be protected by effective price discrimination from above market prices paid by the ignorant; and 4. [a]bility to exploit must be 'substantial': [t]he defendant's resulting ability to exploit the ignorant must be 'substantial.'").

value of users' time."¹⁵⁸ Switching costs can be express or implied.¹⁵⁹ Express switching costs include contractual penalties, while implicit switching costs include the inherent uncertainties regarding a newly purchased product.¹⁶⁰

This approach suggests that high switching costs discourage consumers from switching to substitute providers.¹⁶¹ If so, the current provider can acquire a large market share from the locked-in users¹⁶² and block out potential entrants.¹⁶³ The effect is particularly acute when economies of scale are present.

The approach suggests that a firm's market power can be inferred if courts find that the current provider is able to charge a monopolistic price without losing consumers due to high switching costs.¹⁶⁴ In *United States v. Microsoft*, the court found that Microsoft's decision to tie its web-browser (Internet Explorer) to its Windows operating system, which already had monopoly power, was unlawful monopolization. Microsoft's operating system had more than ninety-five percent of the PC market share,¹⁶⁵ and Windows' great volume of applications created an entry barrier for smaller operating system developers. Further, Microsoft's behavior of "set[ting] the price of Windows without considering rivals' price" was exclusionary conduct.¹⁶⁶ Most importantly, the court found substantial switching costs between

¹⁵⁸ See Aaron S. Edlin & Robert G. Harris, *The Role of Switching Costs in Antitrust Analysis: A Comparison of Microsoft and Google*, 15 YALE J. L. & TECH. 169, 176 (2013) (citing Joseph Farrell & Paul Klemperer, *Coordination and Lock-In: Competition with Switching Costs and Network Effects*, HANDBOOK OF INDUSTRIAL ORGANIZATION, 1971 (Mark Armstrong & Robert H. Porter eds., 2007). Another definition states that switching costs are "the perceived disutility a customer would experience from changing products or service providers." See Pei-yu Chen & Lorin M. Hitt, *Information Technology and Switching Costs*, HANDBOOK ON ECON. & INFO. SYS., Sept. 2005, at 440. Others define the concept as "the disutility a consumer receives when transitioning from one good to another." See Jiawei Chen & Michael Sacks, *Reimbursing Consumers' Switching Costs in Network Industries*, NET INSTITUTE, Sept. 2016, at 8. Despite minor differences in the wording, switching costs can be understood as the costs implicit in switching from one supplier to another.

¹⁵⁹ See Chen & Hitt, *supra* note 158, at 4.

¹⁶⁰ *Id.*

¹⁶¹ *United States v. United Shoe Mach. Corp.*, 110 F. Supp. 295 (D. Mass. 1953); *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 309 (3d. Cir. 2007); *LePage's Inc. v. 3M*, 324 F.3d 141 (3rd Cir. 2003); *Advanced Micro Devices, Inc. v. Intel Corp.*, No. 05-441, 2008 WL 5377979 (D. Del. Dec. 18, 2008)); see also Edlin & Harris, *supra* note 158, at 188-92.

¹⁶² See Chen & Sacks, *supra* note 158.

¹⁶³ See Farrell & Klemperer, *supra* note 158, at §2.8.5; see also Paul Klemperer, *Entry Deterrence in Markets with Consumer Switching Costs*, 97 ECON. J. 99, 99 (1987); see also Paul Klemperer, *Competition When Consumers Have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics, and International Trade*, 62 REV. ECON. STUD. 515, 536 (1995) [hereinafter *Competition*]; Chen & Hitt, *supra* note 158, at 18.

¹⁶⁴ See Alan Beggs & Paul Klemperer, *Multi-Period Competition with Switching Costs*, 60 ECONOMETRICA 651, 651 (1992). See also *Competition*, *supra* note 163, at 519; CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 174-75 (1998) (noting that "[p]ositive feedback makes the strong grow stronger... and the weak grow weaker."); Chen & Hitt, *supra* note 158, at 18.

¹⁶⁵ *United States v. Microsoft Corp.*, 253 F.3d 34, 54 (D.C. Cir. 2001).

¹⁶⁶ *Id.* at 58.

operating systems. Windows has a great volume of applications which can only work with Windows.¹⁶⁷ Users who decide to leave Windows face switching costs: they lose their personal data and must spend time installing a new set of programs and learning how to use them. Accordingly, through the tying strategy, Microsoft artificially tied Windows (tying product) with IE (tied product). The strategy increased switching costs (personal data and time for learning) for Windows users, deterring them from leaving IE for other alternative web-browsers. The tying strategy was therefore illegal. The court found that Microsoft efforts to deter users' free mobility within the operating system market had anticompetitive effects.¹⁶⁸

The switching costs approach is a desirable indicator for assessing Facebook's market power. First, as previously discussed, economies of scale are a common feature of online networking platforms.¹⁶⁹ This creates difficulties for new market entrants. When there are no new competitors, consumers' free switching among existing platforms becomes a fundamentally important mechanism to stop dominant firms from increasing prices. Therefore, the level, the scope, and the duration of switching costs are directly correlated with market power.

Second, this approach reflects an important feature of the online networking marketplace – information asymmetry between platforms and users. When information transparency is low, users have a harder time switching platforms.¹⁷⁰ Thus, this approach provides an easier way for courts to assess market power through the presence of reliable information for users.

Lastly, the switching costs approach succeeds in confronting the reality that data stored on one system usually may not be ported to another due to technical incompatibilities.¹⁷¹ As a result, users face high switching costs because they are generally unwilling to give up access to their platform-specific data.

Several factors may be used to assess lock-in effects for users of digital platforms, including users' capabilities to access multiple platforms for similar purposes, levels of data portability, the amount of data about a specific person for

¹⁶⁷ *Id.* at 55 (indicating that “barrier—the ‘applications barrier to entry’—stems from two characteristics of the software market: (1) most consumers prefer operating systems for which a large number of applications have already been written; and (2) most developers prefer to write for operating systems that already have a substantial consumer base. This ‘chicken-and-egg’ situation ensures that applications will continue to be written for the already dominant Windows, which in turn ensures that consumers will continue to prefer it over other operating systems.”) (citation omitted).

¹⁶⁸ *Id.* at 64-67.

¹⁶⁹ See ZINGALES ET AL., *supra* note 117, at 3-4.

¹⁷⁰ See SHAPIRO & VARIAN, *supra* note 164, at 103 (suggesting that “... in the information age, buyers typically must bear costs when they switch from one information system to another. Understanding these costs of switching technologies, or even brands, is fundamental to success in today's economy.”).

¹⁷¹ *Id.* at 122-23.

personalized services, and the level of users' trust in platforms.¹⁷² Notably, because platforms' functions and operations vary, each inquiry will be contextual.¹⁷³

C. Entry Barriers Approach

Finally, the entry barriers approach may be appropriate for assessing the market share of an online networking platform. The presence of entry barriers is a reliable indicator of market power as they prevent potential entrants from engaging with the market and thus allow the incumbents to set competitive prices without losing business.¹⁷⁴ The D.C. Circuit noted in *Microsoft* that a firm's monopoly power is more likely to be found when the "market is [] protected by significant barriers to entry."¹⁷⁵

In the 1992 *Kodak* case, the Supreme Court explicitly adopted the entry barriers approach (as well as the switching costs approach) to find that Kodak had market power in the supplementary parts and repair service markets. This approach has been followed by the lower courts.¹⁷⁶ As a result, entry barriers have long been recognized as a decisive and independent indicator of market power.¹⁷⁷

In theory, in a market without significant barriers to entry, monopoly prices attract new entrants, who increase the supply of the product or service and drive down prices.¹⁷⁸ Entry barriers distort this competitive process and enable incumbents to manipulate prices. Even in price-free markets where firms are competing on quality, entry barriers still matter, as they may preclude potential competitors from entering the market and permit dominant firms to protect their monopolistic positions.

When employing this approach in the context of online networking markets, there are three indicators which may show the existence of entry barriers. One looks to whether certain resources are essential to compete – here, a large user base is

¹⁷² See Bamberger & Lobel, *supra* note 9, at 1067.

¹⁷³ *Id.*

¹⁷⁴ See, e.g., BAIN, *supra* note 112, at 4, 203; Patrick F. Todd, *Intra-platform Exclusion in Software Markets*, 6 J. ANTITRUST ENF'T. 409, 416 (2018).

¹⁷⁵ *United States v. Microsoft Corp.*, 253 F.3d 34, 82 (D.C. Cir. 2001).

¹⁷⁶ *Virtual Maint. v. Prime Comput.*, 11 F.3d 660 (6th Cir. 1994); *Red Lion Med. Safety v. Ohmeda, Inc.*, 63 F. Supp. 2d 1218 (E.D. Cal. 1999); *Commercial Data Servers v. IBM*, 262 F. Supp. 2d 50 (S.D.N.Y. 2003).

¹⁷⁷ In *DocMagic, Inc. v. Ellie Mae, Inc.*, the court dismissed the plaintiff's market power allegation based on the market share approach, indicating that thirty-five percent of the market share is insufficient to infer monopoly power. However, the Court expressly recognized "high barriers to entry and network effects" can be a way to establish the existence of market power. *DocMagic, Inc. v. Ellie Mae, Inc.*, 745 F. Supp. 2d 1119, 1152-53 (N.D. Cal. 2010).

¹⁷⁸ See BAIN, *supra* note 112, at 12 (concluding that "[f]or easy entry, three conditions must in general be simultaneously fulfilled. At any stage in the relevant progression of entry (1) established firms have no absolute cost advantages over potential entrant firms; (2) established firms have no product differentiation advantages over potential entrant firms; and (3) economies of large-scale firm are negligible, in the sense that the output of a firm of optimal (lowest-cost) scale is an insignificant fraction of total industry output.").

such a critical resource. Second, intellectual property rights may potentially form a barrier. Finally, in online networking markets big data technologies may constitute entry barriers to new entrants.

The first indicator looks to monopolized essential facilities and resources.¹⁷⁹ In some industries, certain resources are essential to competition and firms without access are at a distinct disadvantage.¹⁸⁰ In the online networking market, the volume of users is a critical resource for online platforms; hence, network effects, which generate more users for the dominant platform, can be considered a type of entry barrier.¹⁸¹

This kind of argument is best illustrated with an example. In *LiveUniverse, Inc. v. MySpace, Inc.*, both the plaintiff, LiveUniverse, and the defendant, MySpace, operated online social networking websites that competed with each other.¹⁸² LiveUniverse operated vidilife.com, and MySpace operated myspace.com. LiveUniverse claimed that “MySpace prevent[ed] users from watching vidiLife videos that they or other users previously loaded onto their MySpace webpage, delete[d] references to ‘vidilife.com’ on MySpace, and prevent[ed] MySpace users from mentioning ‘vidilife.com’” therefore violating section 2 of the Sherman Act.¹⁸³

The court first held that MySpace’s eighty-two percent of the market share (measured by user visits) was sufficient to constitute monopoly power.¹⁸⁴ The court further held that LiveUniverse had proven the existence of entry barriers based on

¹⁷⁹ See AREEDA, ET AL., *supra* note 112, at 114. The second type of entry barriers emerge from economies of scale and sunken costs. See White, *supra* note 35, at 9. Entry barriers generally emerge in markets where firms need to reach a relatively large market share to cover fixed cost; a great amount of output lowers costs. In a market where new entrants must invest significant resources, expansion is less likely, especially considering the dominating firms’ existing advantage. Third, entry barriers may also arise as a result of regulatory limitations. For example, historically, postal, gasoline, salt, and other daily necessities were managed as state-owned businesses. Therefore, no private firms could enter these markets legally.

¹⁸⁰ Traditional examples include unique mineral deposits, transport infrastructure, and telecommunications networks. For more examples, see BAIN, *supra* note 112, at 81-82. Similarly, in recent years, an antitrust debate has emerged over the degree to which intellectual property rights should grant right holders the ability to monopolize profits. On the one hand, a reasonable competition-exclusion power granted by patent law ensures right holders’ profits, which encourages innovation. See AREEDA, ET AL., *supra* note 112, at 353. On the other hand, a strong patent right may create barriers to entry because right holders could use the right to deter further innovation, by other parties. See, e.g., *United States v. Gen. Elec. Co.*, 272 U.S. 476 (1926); *United States v. Univis Lens Co.*, 316 U.S. 241 (1942); *Kimble v. Marvel Entm’t, LLC*, 576 U.S. 446 (2015); see also GERRIT DE GEEST & SHIN-RU CHENG, *ANTITRUST LAW: CASES AND MATERIALS* 228-29 (2018).

¹⁸¹ In the antitrust analysis, networks effects must satisfy two elements to be considered entry barriers: “(1) that network effects were a necessary or even probable, rather than merely possible, consequence of high market share in the browser market and (2) that a barrier to entry resulting from network effects would be ‘significant’ enough to confer monopoly power.” See *United States v. Microsoft Corp.*, 253 F.3d 34, 83 (D.C. Cir. 2001).

¹⁸² *LiveUniverse, Inc. v. MySpace, Inc.*, No. 06-6994, 2007 WL 6865852, at *1 (C.D. Cal. June 4, 2007), *aff’d*, 304 F. App’x 554 (9th Cir. 2008).

¹⁸³ *Id.*

¹⁸⁴ *Id.* at 20-23.

network effects and “other characteristics of the market that combine with network effects.”¹⁸⁵ At the same time, the court rejected MySpace’s argument that “the dynamic nature of the market and the constant entry and exit of competitors undermine[d]” LiveUniverse’s allegations because the mere fact that there were many new entrants did not necessarily mean that potential entrants were able to challenge the existing market leaders.¹⁸⁶

Second, intellectual property rights may contribute to market power through IP-related barriers. A strong IP portfolio may create entry barriers if rightsholders can exercise their rights to stop rivals from launching competing products or services.¹⁸⁷

However, the United States District Court for the Northern District of California held that a legal exercise of intellectual property rights is not analogous to using illegal means to maintain market power. In *Facebook, v. Power Ventures*, Facebook brought suit against the defendant, Power Ventures (Power), claiming that Power accessed Facebook’s websites without authorization. Power counterclaimed, arguing that Facebook’s business model violated section 2 of the Sherman Act.¹⁸⁸ To establish Facebook’s monopoly power, Power noted that Facebook scrapes the data from its users and third-party websites in order to fuel its growth, which gives Facebook a strong competitive disadvantage over its competitors.¹⁸⁹ The court dismissed Power’s entry barrier claims since Power cited no authority to support the claim that “Facebook is somehow obligated to allow third-party websites unfettered access to its own website.”¹⁹⁰ Furthermore, “if Facebook has the right to manage access to and use of its website,” it can exercise the right against unauthorized access to its website.¹⁹¹ Therefore, Power’s two arguments failed to

¹⁸⁵ *Id.* at 23-28 (holding that “[a] mere showing of substantial or even dominant market share alone cannot establish market power sufficient [for an antitrust violation]. The plaintiff must show that new rivals are barred from entering the market and show that existing competitors lack the capacity to expand their output to challenge the [market leaders’ anticompetitive conduct].”) (citing *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421 (9th Cir. 1995)). Pursuant to this holding, to prove market power, plaintiff must show both high degree of market share and entry barriers to the market. In the instant case, the court found LiveUniverse’s allegation that “social networking websites rely on users to create profiles and content that, in turn, attract new users and visitors” is an important market characteristic to build market barriers.

¹⁸⁶ *Id.* at 30. The court cited *Rebel Oil* to hold that “[t]he fact that entry has occurred does not necessarily preclude that existence of ‘significant’ entry barriers. If the output or capacity of the new entrant is insufficient to take significant business away from the [monopolist], they are unlikely to represent a challenge to the [monopolist’s] market power.”

¹⁸⁷ *See, e.g.*, *United States v. Gen. Elec. Co.*, 272 U.S. 476 (1926); *United States v. Univis Lens Co.*, 316 U.S. 241 (1942); *Kimble v. Marvel Entm’t, LLC*, 576 U.S. 446 (2015). But, on the other hand, a reasonable competition-exclusion power granted by IP law ensures right holders’ profits, which encourages innovation. *See* GEEST & CHENG, *supra* note 180, at 228-29.

¹⁸⁸ *Facebook, Inc. v. Power Ventures, Inc.*, No. 08-05780, 2010 WL 3291750, at *3 (N.D. Cal. July 20, 2010).

¹⁸⁹ *Id.* at *40. Power Ventures also claimed that Facebook not only scrapes the data from users but also “simultaneously prohibited (and prohibits) users from using the same type of utility to access their own user data when it is stored on the Facebook site,” and prohibited users from “logging into Facebook through third-party sites” (including Power’s website).

¹⁹⁰ *Id.* at *42-43.

¹⁹¹ *Id.*

show Facebook's monopoly power. The lesson is that while uses of intellectual property rights may constitute entry barriers, litigants have to be careful about how they describe and prove their claims to justify a finding of market power.

Third, in reviewing Facebook's market power, one should not ignore the fact that big data operations are available only to a few dominant players. An emerging issue in this field is whether big data technology can create entry barriers. Some say no, arguing that since data is non-rivalrous, users' personal information can be collected by multiple firms simultaneously. As such, any potential entrant can access and collect the data. This viewpoint is unrealistic. As noted above, data harvesting activities are highly complex. Due to big data analytics, modern firms can predict consumers' behavioral patterns and provide personalized products to trigger consumption.¹⁹² Smaller firms must compete with tech giants with the same access to users' data. However, their attempts to collect data are complicated by first-mover advantage, network effects, and enormous upfront costs.¹⁹³ As such, when evaluating Facebook's market power, one should consider the data driven market as a substantial entry barrier.

It is noteworthy that in a two-sided market, high entry barriers in interrelated product markets can make it impossible to enter another market.¹⁹⁴ As an intermediary, Facebook provides services at no cost to consumers and generates profits by selling advertising channels.¹⁹⁵ Due to this configuration, "[i]f entry barriers are high in the interrelated products market, entry into the zero-price market may be unlikely—even if barriers are low in the zero-price product market itself."¹⁹⁶

Data collection is another possible source of entry barriers. Data regarding interaction with consumers is essential to offering personalized services. However, Facebook has established an incomparable dataset covering personal historical data from the whole market due to the first-mover advantage. Without the data, new entrants are unlikely to win users from Facebook by offering more attractive services.

V. CONCLUSION

Facebook is a two-sided market, which enlarges its user base by providing attractive services at no cost to consumers. At the same time, it offers personalized

¹⁹² See Jan Kramer & Michael Wohlfarth, *Market Power, Regulatory Convergence, and the Role of Data in Digital Markets*, 42 TELECOMM. POL'Y 154, 164 (2017).

¹⁹³ Rubinfeld and Gal have indicated that in data-driven markets, the dominant firms are more likely to enjoy competitive advantages over smaller firms, which leads to concentration because data is an input to service quality. See Rubinfeld & Gal, *supra* note 128, at 379-80. Moreover, Posner has also concluded that network effects could discourage subsequent innovation in digital markets. See Posner, *supra* note 16, at 9.

¹⁹⁴ See Newman, *supra* note 11, at 77-79.

¹⁹⁵ See White, *supra* note 35, at 77.

¹⁹⁶ Newman, *supra* note 11, at 77.

advertising services to advertisers. The model enables Facebook to be the world's largest online networking platform by number of users.

A comprehensive market power analysis should consider Facebook's unique economic features. To that end, this Article has provided an overview of Facebook's business model and explained why traditional approaches to assessing market power are insufficient. First, the direct effects approach has rarely been employed by courts to measure a company's market power. Second, Facebook provides its services at no cost to consumers and its marginal costs associated with serving additional users are nearly zero. This makes it impossible to infer market power with reference to the Lerner Index approach. Lastly, Facebook has captured most of the market due to economies of scale and network effects, the online networking market's two critical economic features. Thus, large market share alone is insufficient to conclude that Facebook's faces no competition.

Based on Facebook's economic features, this study concludes that the information gaps approach, the switching costs approach, and the entry barriers approach are more appropriate in assessing Facebook's market power. These findings similarly apply to other high-tech giants operating under the two-sided market. Companies falling in this category include Google, Amazon, YouTube, and Apple.

The information gaps approach reflects an essential feature of Facebook's operations. Its users cannot compare Facebook's service quality before joining the network. They remain uninformed while they use Facebook's products and services. The lack of knowledge discourages people from leaving Facebook and also affects the competition between online networking platforms. Consequently, courts may infer Facebook's market power based on the seriously disadvantaged position of its users in accessing information related to the costs of using the platform.

The switching costs approach is similarly a useful tool for determining Facebook's market power. The approach acknowledges that it is very difficult to enter the online networking market. In the context of such a market, the ability of users to switch between platforms plays a critical role in maintaining market competition. Therefore, courts can infer market power based on the existence of formidable switching costs.

Facebooks' switching costs come from two main sources. First, information search costs deter switching. This is compounded by the fact that Facebook lacks information transparency. Given that it is costly for users to evaluate the quality of Facebook's goods and services, one can argue that this reflects the company's market power. Second, data migration is a significant factor. The fact that porting personal data from Facebook to other platforms is impossible for most users makes it a reliable indicator of Facebook's market power.

Lastly, the entry barriers approach succeeds in demonstrating Facebook's market power because the presence of substantial entry barriers shields companies, such as Facebook, from competitors. In the online networking market, entry barriers are related to network effects, exercises of IP rights, and existing platforms'

monopoly on user data. Courts should identify entry barriers in situations where competing platforms are substantially excluded from either acquiring a meaningful number of new users or from accessing and processing their data. Moreover, entry barriers can be demonstrated by highlighting Facebook's unreasonable exercises of IP rights to exclude potential competitors. Notably, since the two sides of Facebook's platform are interrelated, high entry barriers in one side create barriers on the other side.

As authorities and consumers around the world become more concerned with the market power of Facebook and online platforms, it is vital that litigants and courts employ the right measures for assessing market power. While traditional approaches will not be useful for such markets going forward, useful approaches do exist and should be utilized.