

ANTITRUST AND COMMITMENT ISSUES: MONOPOLIZATION OF THE DATING APP INDUSTRY

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The Department of Justice and the Federal Trade Commission have largely abdicated their role to scrutinize and challenge mergers in zero-priced industries. This abdication derives from a Chicago School assumption that concentration in these industries will not lead to consumer harm. Due to the agencies' hands-off approach to merger review, the digital economy is rapidly concentrating as firms are permitted to acquire their competitors with no meaningful antitrust supervision. Increased consolidation of ownership is evident in the dating app industry. One firm has acquired twenty-five rival dating apps in the past decade and now operates over forty-five distinct dating sites, including Tinder, OkCupid, and Hinge. In this Note, I argue that increased concentration and decreased competition in the dating app sector can lead to three types of consumer harm: price discrimination, deterioration of quality, and reduced data privacy.

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INTRODUCTION

In 2018, Bumble, the sixth most popular smartphone dating application,¹ began searching for a buyer. Bumble’s majority owner sought to value the four-year-old company at \$1.5 billion.² Match Group (Match), the world’s largest conglomerate of dating applications, began positioning to acquire the company, although negotiations have since ceased.³ If Match eventually acquires Bumble, the app would be the twenty-sixth dating site purchased by Match since 2009.⁴ Recent notable acquisitions include OkCupid (2011),⁵ PlentyOfFish (2015),⁶ and Hinge (2018).⁷ The acquisition of Bumble would result in Match controlling five of the six most popular dating apps in the country—including Tinder, the market leader⁸—and over forty-five dating businesses in all.⁹

Typically, the United States antitrust authorities, the Department of Justice (DOJ) and the Federal Trade Commission (FTC), scrutinize

¹ See *Most Popular Online Dating Apps in the United States as of December 2017*, by Audience Size (in Millions), STATISTA, <https://www.statista.com/statistics/826778/most-popular-dating-apps-by-audience-size-usa> (last visited May 21, 2019) [hereinafter *Most Popular Online Dating Apps*] (ranking the most popular dating apps in the United States).

² Alex Sherman & Leslie Picker, *Badoo, the Majority Owner of the Dating App Bumble, Is Seeking a Sale that Could Value the Company at \$1.5 Billion*, CNBC (Jan. 23, 2018, 5:15 PM), <https://www.cnbc.com/2018/01/23/bumble-majority-owner-badoo-looking-to-sell-for-about-1-point-5-billion.html>.

³ *Id.* Negotiations have ceased as Match has adopted an aggressive patent infringement litigation strategy to challenge Bumble’s similarity to Tinder. See Camila Domonoske, *The Tinder-Bumble Feud: Dating Apps Fight over Who Owns the Swipe*, NPR (Oct. 30, 2018, 3:05 PM), <https://www.npr.org/2018/10/30/660006488/the-tinder-bumble-feud-dating-apps-fight-over-who-owns-the-swipe> (describing the litigation between Match and Bumble).

⁴ JP Mangalindan, *How Match Got Away with Buying 25 Dating Sites—and Counting*, YAHOO! FIN. (June 25, 2018), <https://finance.yahoo.com/news/match-group-can-get-away-acquiring-25-dating-sites-counting-151306438.html>.

⁵ Kaitlyn Tiffany, *Nearly All of the Big Dating Apps Are Now Owned by the Same Company*, VOX (Feb. 11, 2019, 1:10 PM), <https://www.vox.com/the-goods/2019/2/11/18220425/hinge-explained-match-group-tinder-dating-apps>.

⁶ Nathan McAlone, *Bootstrapped Dating Site PlentyOfFish Has Fewer than 100 Employees and Match Just Bought It for \$575 Million in Cash*, BUS. INSIDER (July 14, 2015, 10:57 AM), <https://www.businessinsider.com/match-buys-plentyoffish-for-575-million-2015-7>.

⁷ Joshua Brustein, *Tinder Owner Match Group Buys Hinge, the Anti-Tinder Dating App*, BLOOMBERG (June 20, 2018, 3:00 PM), <https://www.bloomberg.com/news/articles/2018-06-20/match-group-buys-hinge-an-anti-tinder-dating-app>.

⁸ *Most Popular Online Dating Apps*, *supra* note 1.

⁹ Ashley Carman, *Tinder Parent Company Buys Anti-Tinder Dating App Hinge*, VERGE (June 20, 2018, 5:06 PM), <https://www.theverge.com/tech/2018/6/20/17485750/match-group-acquire-hinge-deal-online-dating>.

a merger that increases market power. The Agencies seek to “challenge competitively harmful mergers while avoiding unnecessary interference with mergers that are either competitively beneficial or neutral.”¹⁰ The “unifying theme” is that “mergers should not be permitted to create, enhance, or entrench market power.”¹¹ Examples of mergers challenged on these grounds include the attempted 2011 merger of AT&T and T-Mobile, the second- and fourth-largest wireless carriers respectively at that time,¹² and the merger of the two largest fantasy sports websites.¹³

The Agencies consider three major factors in deciding whether to challenge proposed mergers or acquisitions: market shares of the merging parties, reduction of head-to-head competition, and the potentially disruptive role of the acquired party.¹⁴ These factors imply that Match’s acquisition of Bumble would trigger scrutiny from the Agencies. The acquisition would bolster Match’s already significant market share.¹⁵ Bumble is the only direct competitor of Match’s Tinder with any meaningful market penetration.¹⁶ Moreover, Bumble can be seen as a disruptive competitor: Its rise has mirrored that of a maverick firm with both innovative product design and meteoric growth in a two-year period.¹⁷

But any acquisition in the dating app market will likely go unchallenged.¹⁸ The Agencies have ignored acquisitions in zero-priced mar-

¹⁰ DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 1 (2010) [hereinafter GUIDELINES], <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>.

¹¹ *Id.*

¹² For earlier context, see Jessica Roy, *4 Corporate Mergers Shot Down by the Government*, SPLINTER (Feb. 26, 2014, 1:27 PM), <https://splinternews.com/4-corporate-mergers-shot-down-by-the-government-1793840916>.

¹³ Press Release, Fed. Trade Comm’n, FTC and Two State Attorneys General Challenge Proposed Merger of the Two Largest Daily Fantasy Sports Sites, DraftKings and FanDuel (June 19, 2017), <https://www.ftc.gov/news-events/press-releases/2017/06/ftc-two-state-attorneys-general-challenge-proposed-merger-two>.

¹⁴ GUIDELINES, *supra* note 10, § 2.

¹⁵ See *infra* Section I.B.2 (describing the current makeup of the dating app industry).

¹⁶ See *infra* Section I.B.2 (describing the market power of Tinder’s competitors); see also Valeriya Safronova, *Tinder and Bumble Are Seriously at War*, N.Y. TIMES (Apr. 4, 2018), <https://www.nytimes.com/2018/04/04/style/tinder-bumble-lawsuit-explainer.html> (detailing the history of the heated competition between the two firms).

¹⁷ Bumble has branded itself as a feminist dating app where only women have the power to initiate conversations. See, e.g., Safronova, *supra* note 16. The strategy has paid off: Downloads of Bumble have increased 570% from 2016 to 2018. *Id.*

¹⁸ See, e.g., *infra* Section I.B.2 (detailing how the acquisition of Hinge by Match in 2018 continued seemingly unchallenged, even though it presumably should have triggered antitrust scrutiny); see also Tiffany, *supra* note 5 (stating that the consolidation in the dating app industry is “unlikely to concern the Federal Trade Commission”).

kets¹⁹—that is, markets in which consumers can receive goods or services without paying a price in the traditional sense. This is the case for two reasons. First, dominance in digital markets is presumed to be fleeting. The rise and fall of MySpace²⁰ embodies a perennial policy argument: Competition is dynamic, success is unpredictable, and even the giants may fall. The market self-corrects. AIM messenger is everywhere, until it's not.²¹ Everyone uses Yahoo!, until they don't.²² The constant threat of new competition—that is, the threat of a new firm upsetting Facebook just like Facebook upset MySpace and MySpace upset Friendster²³—keeps the market in check.

Second, the mainstream argument holds that even a dominant firm in a zero-priced market lacks sufficient *market power* to harm consumers.²⁴ Market power is the ability of a firm to “raise prices above those that would be charged in a competitive market”²⁵ or to reduce the output or quality of services or goods.²⁶ But in the minds of some scholars,²⁷ courts,²⁸ and enforcers,²⁹ firms in zero-priced markets

¹⁹ See Allen P. Grunes & Maurice E. Stucke, *No Mistake About It: The Important Role of Antitrust in the Era of Big Data*, ANTITRUST SOURCE, Apr. 2015, at 7 (“[O]nline firms have been able to convince some courts that there is no product market for ‘free’ services like search, and convince agencies to treat online media as just another form of traditional media where the consumer can be ignored.”). See generally Maurice E. Stucke, *Here Are All the Reasons It’s a Bad Idea to Let a Few Tech Companies Monopolize Our Data*, HARV. BUS. REV. (Mar. 27, 2018), <https://hbr.org/2018/03/here-are-all-the-reasons-its-a-bad-idea-to-let-a-few-tech-companies-monopolize-our-data> (describing why U.S. antitrust policy has ignored “data-opolies”).

²⁰ See Nicholas Jackson & Alexis C. Madrigal, *The Rise and Fall of MySpace*, ATLANTIC (Jan. 12, 2011), <https://www.theatlantic.com/technology/archive/2011/01/the-rise-and-fall-of-myspace/69444> (detailing the timeline of MySpace from its launch in 2003, its growth in 2005 and 2006, and its eventual demise from 2009 to 2012).

²¹ In the 2000s, AIM dominated the instant messaging market. See Ben Panko, *The Sharp Rise and Steep Descent of AOL Instant Messenger*, SMITHSONIAN.COM (Oct. 6, 2017), <https://www.smithsonianmag.com/smart-news/pioneering-aol-instant-messenger-end-180965152> (“By 2011, AIM held less than one percent of the instant messaging market share.”).

²² See Jeff Desjardins, *One Chart that Explains the Rise and Fall of Yahoo*, BUS. INSIDER (Aug. 1, 2016, 4:32 PM), <https://www.businessinsider.com/one-chart-that-explains-the-rise-and-fall-of-yahoo-2016-8> (outlining the rise and fall of Yahoo!).

²³ See Saqib Shah, *The History of Social Networking*, DIGITAL TRENDS (May 14, 2016, 6:00 AM), <https://www.digitaltrends.com/features/the-history-of-social-networking> (documenting the transition of social media popularity from Friendster to Facebook).

²⁴ See John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149, 160 (2015) (“Courts, enforcers, and theorists have concluded that without prices, there can be no welfare harms of the type that antitrust law seeks to prevent.”).

²⁵ Nat’l Collegiate Athletic Ass’n v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85, 109 n.38 (1984).

²⁶ See GUIDELINES, *supra* note 10, § 1 (stating that market power can also be found in non-price terms).

²⁷ See Newman, *supra* note 24, at 160–63 (documenting mainstream scholarship’s opposition to the application of antitrust policy to zero-priced markets).

likely lack the capacity to exercise power over consumers in a meaningful sense. Indeed, prominent antitrust theorist Robert Bork³⁰ argued, for example, that there “is no coherent case for monopolization [for search engines] because a search engine, like Google, is free to consumers and they can switch to an alternative search engine with a click.”³¹ The Agencies have, in turn, accepted increased concentration in zero-priced industries,³² permitting mergers like Facebook’s acquisition of its “budding rival” Instagram³³ and its \$19 billion acquisition of WhatsApp.³⁴

I challenge both of these conceptions as they relate to dating apps. I argue that the dating app market is highly concentrated and will remain concentrated despite apparent ease of entry. This concentration, and thus any merger enhancing this concentration, can result in at least three types of consumer harm. First, the firm can engage in targeted price hikes against the increasing number of consumers willing to pay for online dating services. Second, it can reduce the quality of its product as seen in the ratio of advertisements to content. Finally, the firm has power over users’ data—intimate information including sexuality, sexual preferences, and relationship history—and consequently has power over the level of security provided to that data.

²⁸ See, e.g., *Kinderstart.com, LLC v. Google, Inc.*, No. C 06-2057 JF (RS), 2007 WL 831806, at *5 (N.D. Cal. Mar. 16, 2007) (“KinderStart cites no authority indicating that antitrust law concerns itself with competition in the provision of free services. . . . KinderStart has not alleged that anyone pays Google to search. Thus, the Search Market is not a ‘market’ for purposes of antitrust law.”).

²⁹ See, e.g., Makan Delrahim, Assistant Att’y Gen., Remarks at the College of Europe in Brussels: Good Times, Bad Times, Trust Will Take Us Far: Competition Enforcement and the Relationship Between Washington and Brussels (Feb. 21, 2018) (“Where there is no demonstrable harm to competition and consumers, we are reluctant to impose special duties on digital platforms, out of our concern that special duties might stifle the very innovation that has created dynamic competition for the benefit of consumers.”).

³⁰ See Dylan Matthews, *Antitrust Was Defined by Robert Bork. I Cannot Overstate His Influence*, WASH. POST (Dec. 20, 2012), <https://www.washingtonpost.com/news/wonk/wp/2012/12/20/antitrust-was-defined-by-robert-bork-i-cannot-overstate-his-influence> (describing Bork’s lasting legacy on antitrust thought).

³¹ Robert H. Bork, *Antitrust and Google*, HUDSON INST. (Apr. 6, 2012), <https://www.hudson.org/research/8861-antitrust-and-google>.

³² Maurice E. Stucke & Ariel Ezrachi, *The Rise, Fall, and Rebirth of the U.S. Antitrust Movement*, HARV. BUS. REV. (Dec. 15, 2017), <https://hbr.org/2017/12/the-rise-fall-and-rebirth-of-the-u-s-antitrust-movement> (describing antitrust enforcers “light-if-any” approach to merger enforcement generally and in the digital economy specifically).

³³ *Facebook Buys Instagram for \$1 Billion, Turns Budding Rival into Its Standalone Photo App*, TECHCRUNCH (Apr. 9, 2012), <https://techcrunch.com/2012/04/09/facebook-to-acquire-instagram-for-1-billion>.

³⁴ Parmy Olson, *Facebook Closes \$19 Billion WhatsApp Deal*, FORBES (Oct. 6, 2014, 1:25 PM), <https://www.forbes.com/sites/parmyolson/2014/10/06/facebook-closes-19-billion-whatsapp-deal>.

This Note proceeds in three parts. Part I describes the current makeup of the dating app market and argues that the industry is highly concentrated and that mergers in the industry warrant scrutiny. Section I.A lays out the DOJ's rubric for challenging a merger. Section I.B applies those guidelines to the dating app market. It argues that due to Match's market share, any acquisition of rival firms—whether that be the potential acquisition of Bumble or the acquisition of other competitors—should receive scrutiny from the Agencies. The Section continues to argue that concentration in the market will likely persist because barriers to entry deter new entrants.

But the Agencies will not challenge a merger based on concentration alone; instead, the Agencies assess whether the increased concentration will result in consumer harm. Section II.A argues that, absent competition, a dominant dating app firm has no incentive to compete on the quality of the app or service provided. Section II.B asserts that a dominant firm can engage in price discrimination. A firm can triangulate which consumers are willing to pay more for dating services and subsequently charge those consumers higher prices, approaching their individual maximum willingness to pay. Section II.C argues that the potential efficiency gains from a merger do not sufficiently mitigate these anticompetitive harms. Part III takes a more unique tack in noting that a dominant dating app has power over the intimate data users share on dating apps. This can permit the app to extract more data from consumers while avoiding adequate investment in privacy security measures.

I

MATCH: THE DOMINANT DATING APP FIRM

Since online dating's inception with the first iteration of Match.com in 1995,³⁵ the market has exploded. By 2017, the once-ridiculed industry hit a yearly revenue of nearly \$3 billion,³⁶ and revenue is expected to grow 25% through 2020.³⁷ The Match Group alone is worth over \$20 billion with a market capitalization that has increased over \$10 billion in the past two years alone.³⁸ Of course,

³⁵ See Todd Krieger, *Love and Money*, WIRED (Sept. 1, 1995, 12:00 PM), <https://www.wired.com/1995/09/love-and-money> (detailing the origins of Electric Classifieds Inc., the original parent company of Match.com).

³⁶ Leigh Gallagher, *Match Is the Sweetheart of Online Dating—but Can It Fend Off Facebook and Bumble?*, FORTUNE (June 27, 2018), <http://fortune.com/2018/06/27/match-dating-tinder-facebook-bumble>.

³⁷ *Id.*

³⁸ See *Match Group Enterprise Value*, YCHARTS, https://ycharts.com/companies/MTCH/enterprise_value (last visited May 22, 2019) (depicting the Match Group's market capitalization over time).

market capitalization in digital markets is often illusory. Snapchat, for example, is slightly larger than Match's Tinder but has yet to turn a profit.³⁹ Tinder, on the other hand, has a profit margin of over 40% and generated at least \$320 million in profit in 2018.⁴⁰

As the promise of profit has grown, so has the number of apps offering new ways to meet partners interested in romantic or sexual relationships. Online Dating Magazine estimates that there are 2500 dating sites currently active in the United States.⁴¹ Some serve people of all ages and sexualities, like the market-leading Tinder.⁴² Others focus on religious affiliation (ChristianMingle),⁴³ racial or cultural identities (BlackPeopleMeet),⁴⁴ or specific sexual identities (Grindr, the leading app for queer men).⁴⁵ Still other apps fill less traditional niches: FarmersOnly,⁴⁶ GlutenFreeSingles,⁴⁷ and even Clown Dating.⁴⁸

³⁹ Kurt Wagner, *Tinder's Business Will Double This Year to More than \$800 Million*, VOX (Aug. 8, 2018, 9:05 AM), <https://www.vox.com/2018/8/8/17662746/tinder-revenue-match-group-q2-earnings>. Match's profit margin for the past five years is larger than other digital titans, including Google and Netflix. *Compare Match Group Profit Margin (Quarterly)*, YCHARTS, https://ycharts.com/companies/MTCH/profit_margin (last visited July 2, 2019) (showing Match's average profit margin for the past five years as 21.07%), *with Alphabet Profit Margin (Quarterly)*, YCHARTS, https://ycharts.com/companies/GOOG/profit_margin (last visited July 2, 2019) (showing Google's same metric as 19.71%), *and Netflix Profit Margin (Quarterly)*, YCHARTS, https://ycharts.com/companies/NFLX/profit_margin (last visited July 2, 2019) (showing Netflix's same metric as 4.37%).

⁴⁰ Wagner, *supra* note 39.

⁴¹ Joe Tracy, *How Many Online Dating Sites Are There?*, ONLINE DATING MAG. (Mar. 22, 2012), <https://www.onlinedatingmagazine.com/faq/howmanyonlinedatingsitesarethere.html>.

⁴² See Kaitlyn Tiffany, *The Tinder Algorithm, Explained*, VOX (Mar. 18, 2019), <https://www.vox.com/2019/2/7/18210998/tinder-algorithm-swiping-tips-dating-app-science> (noting that the users' age is a primary factor in Tinder's matching algorithm); Ashley Fetters, *The 5 Years that Changed Dating*, ATLANTIC (Dec. 21, 2018), <https://www.theatlantic.com/family/archive/2018/12/tinder-changed-dating/578698> (noting that Tinder is available to "people of all sexualities").

⁴³ *About ChristianMingle.com*, CHRISTIAN MINGLE, <https://about.christianmingle.com/en/about-us-en> (last visited May 22, 2019).

⁴⁴ BLACKPEOPLEMEET, <https://www.blackpeoplemeet.com> (last visited May 23, 2019).

⁴⁵ Alexis Mastroiannis, *Gay Dating Apps: A Comprehensive Guide to Jack'd, Grindr, Hornet, Scruff and the Rest*, PINK NEWS (Mar. 5, 2018, 4:18 PM), <https://www.pinknews.co.uk/2018/03/05/best-gay-dating-apps-jackd-grindr-hornet-scruff> ("Grindr has grown to dominate both the actual market and the entire concept of gay hookup culture.").

⁴⁶ FARMERSONLY.COM, <https://www.blog.farmersonly.com> (last visited May 23, 2019) ("City folks just don't get it.").

⁴⁷ *About Us*, GLUTENFREESINGLES, https://glutenfreesingles.com/about_us.php (last visited May 23, 2019) (describing the "need for a gluten-free dating community").

⁴⁸ CLOWN DATING, <https://www.clowndating.com> (last visited May 23, 2019) ("Everybody loves a clown . . . let a clown love you.").

With apps in every niche, the market may appear saturated, but these appearances deceive. In Section I.A, I briefly describe the standards the Agencies use in determining when to scrutinize or challenge a merger. In Section I.B, I apply that framework to the dating app market to argue that mergers in the industry warrant further scrutiny, or even a presumption of anticompetitive effect.

A. *The DOJ Merger Guidelines*

The DOJ's 2010 merger guidelines outline when a merger warrants further scrutiny or presumptively raises antitrust concerns. This is a threshold inquiry. If the Agencies find that a merger does not at least warrant further scrutiny, the merger typically proceeds uncontested.⁴⁹ If the Agencies find that a merger significantly increases concentration in the market, they continue to assess whether that concentration is likely to result in anticompetitive harms.

The first step is typically market definition. The primary guidepost for defining a market is the relative substitutability of products. The DOJ defines this as “customers’ ability and willingness to substitute away from one product to another in response to a price increase or a corresponding non-price change,” including reduction in quality or service.⁵⁰ The analysis is necessarily imprecise. It may include products that are not perfect substitutes, or it may exclude some potential substitutes because market definition is “inevitably a simplification that cannot capture the full variation”⁵¹ To illustrate briefly, imagine the market for red ballpoint pens. If the price of BIC’s ballpoint pens increased by five percent, customers may purchase a competitor’s ballpoint pens, a near perfect substitute. They may also turn to imperfect substitutes like red gel pens, red pencils, or different colored ballpoint pens. The Agencies may define the market as red writing instruments. This definition may be slightly overinclusive (encompassing markers) and underinclusive (excluding pink or purple pens).

After defining the market, the Agencies determine the pre-merger concentration of the market using the Herfindahl-Hirschman Index (HHI).⁵² The HHI measures the level of concentration by summing the squares of the market share of each firm in the industry.⁵³ That is, if a market was evenly split between four firms, the HHI

⁴⁹ GUIDELINES, *supra* note 10, § 5.3 (“Mergers resulting in unconcentrated markets . . . ordinarily require no further analysis.”).

⁵⁰ *Id.* § 4.

⁵¹ *Id.*

⁵² *See id.* § 5.3.

⁵³ *See id.*

would be: $25^2 + 25^2 + 25^2 + 25^2 = 2500$. This number determines the level of concentration in the market. An industry with an HHI under 1500 is considered unconcentrated.⁵⁴ An industry between 1500 and 2500 is considered moderately concentrated, and one with an HHI of greater than 2500 is considered to be highly concentrated.⁵⁵

Next, the DOJ measures the post-merger HHI and determines whether the increase in concentration may present antitrust concerns. The level of risk a merger presents varies based on the resulting level of concentration and the increase in concentration.⁵⁶ If the merger results in an unconcentrated market (an HHI less than 1500), the market is deemed competitive, regardless of the level of increase.⁵⁷ If the merger results in a moderately or highly concentrated market (an HHI above 1500), any increase over 100 warrants scrutiny.⁵⁸ If the merger increases the market by over 200 points and results in a highly concentrated market (over 2500), the merger is presumed to be anticompetitive.⁵⁹ The following chart summarizes the DOJ's HHI rubric:

TABLE 1: HHI OVERVIEW

Post-Merger HHI	Increase of <100	Increase of 100–200	Increase of 200+
Less than 1500	Unlikely to be Anticompetitive	Unlikely to be Anticompetitive	Unlikely to be Anticompetitive
1500–2500	Unlikely to be Anticompetitive	Warrant Scrutiny	Warrant Scrutiny
2500+	Unlikely to be Anticompetitive	Warrant Scrutiny	Presumed Anticompetitive

In sum, the Agencies scrutinize mergers resulting in an increase of greater than 100 in both moderately and highly concentrated markets. An increase of 200 will result in a presumption of anticompetitive effect. This means that the Agencies will challenge the merger unless they find that it creates merger-specific efficiencies or that the presumed effects will otherwise not materialize.⁶⁰

⁵⁴ See *id.* In a market evenly divided between ten firms, for example, the HHI would be $10^2+10^2+10^2+10^2+10^2+10^2+10^2+10^2+10^2+10^2 = 1000$.

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.* §§ 5.3, 10.

B. Concentration in the Dating App Market

Under this framework, I argue that mergers in the dating app market merit scrutiny from the Agencies. After defining the boundaries of the dating app market in Section I.B.1, I assess the level of concentration in the market. In Section I.B.3, I argue that the possibility for future competition does not change the analysis.

1. Defining the Dating Market

Defining the dating market is, well, complicated. The traditional methods of market delineation do not translate to zero-priced markets. The Agencies typically employ price mechanisms to determine which products are relative substitutes. Under this analysis, the Agencies determine which products consumers buy in response to a small but significant increase of price of the relevant product.⁶¹ Since this test is not applicable to zero-priced markets, I turn to a common-sense definition put forth by the Supreme Court.⁶²

Dating exists on a spectrum. On one end, dating can be ad hoc and DIY (“do-it-yourself”). It is the Hallmark movie chance meeting at a coffee shop. It is the three-in-one-million chance of finding love at a bar.⁶³ It is the not-so-missed Craigslist Missed Connection, the law school classmates, or the Instagram-follower-turned-lover.⁶⁴ But on the other end of the spectrum, dating can involve a professional matchmaking service costing \$25,000.⁶⁵

Dating apps occupy the middle space on that spectrum. Some offer a degree of algorithmic matchmaker curation; others require the

⁶¹ See *id.* § 4.1.2 (describing this analysis). To illustrate, recall the ballpoint pen example mentioned above. The Agencies would define the relevant market by hypothesizing a five percent price increase on all red ballpoint pens. If a “hypothetical monopolist”—that is, a theoretical firm which owns all red ballpoint pens—could profitably raise prices, the market is defined as red ballpoint pens. If the price increase results in a critical mass of consumers turning to alternative products, the market definition is expanded to include that alternative.

⁶² See *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962) (noting that markets often need to be defined by their “practical indicia”).

⁶³ Kathleen Johnston, *The Chance of Finding True Love on a Night Out Is Infinitesimally Small*, *GQ* (Feb. 20, 2018), <https://www.gq-magazine.co.uk/article/online-dating-statistics-bumble> (describing the likelihood of finding love on a night out in London).

⁶⁴ Valeriya Safronova, *Instagram Is Now a Dating Platform, Too. Here’s How It Works.*, *N.Y. TIMES* (Dec. 21, 2017), <https://www.nytimes.com/2017/12/21/style/instagram-thirst-traps-dating-breakups.html> (describing Instagram’s role as a matchmaker through the use of direct messages (DMs) and the posting of pictures intended to elicit attention (Thirst Traps)).

⁶⁵ See Jillian Anthony, *The Matchmakers Helping New Yorkers Find Love Right Now*, *TIMEOUT* (Aug. 1, 2017), <https://www.timeout.com/newyork/sex-dating/best-matchmakers-in-nyc> (describing the professional matchmakers practicing in New York City).

user to make the first move among a sea of choices. But one thing is certain: Dating apps are unique among either dating services or DIY nights at a bar. Unlike matchmakers, apps are affordable, easily accessible, and increasingly ubiquitous. Unlike the DIY options, apps reduce the risk of asking out the married stranger, the straight man, or the girl who is just not that into you. Regardless of which strategy they adopt, dating apps offer the same service—a pool of available partners.

I limit the dating app market to smartphone and desktop applications in the United States that run on a combination of two business models: algorithmic-pairing and “double opt-in”⁶⁶ public profile models. This definition excludes both professionally curated matchmaking services and DIY dating options. It includes all apps regardless of regional popularity, sexuality, or age of the target market.

Algorithmic matchmaking apps like Match or eHarmony seek to use a series of personalized questionnaires and machine-learning algorithms to pair users with a pool of curated, compatible partners.⁶⁷ These apps have grown in popularity, particularly among users older than thirty.⁶⁸ Apps on this model are often free for the basic edition but include costlier premium subscriptions. For example, a premium month-to-month Match subscription costs \$45, and a similar eHarmony subscription costs \$60.⁶⁹

More recently, firms have adopted a business model with less math involved: “double opt-in” public profiles.⁷⁰ User 1 creates a profile, and the mere creation of a profile signals to other users that she is available (or that she has “opted in”). Every other user that she sees on the app has similarly opted in. Tinder is the dominant example.⁷¹ A

⁶⁶ Dan Primack, *Tinder Has Patented Swiping and Double-Opt-In Matches*, AXIOS (Feb. 7, 2018), <https://www.axios.com/tinder-patent-swipe-left-right-double-opt-in-bumble-merger-ab228141-bdf7-4477-9b2e-c7ec0891c0a8.html>.

⁶⁷ See, e.g., David Gelles, *Inside Match.com*, SLATE (July 30, 2011, 7:12 AM), <https://slate.com/human-interest/2011/07/inside-match-com-it-s-all-about-the-algorithm.html> (describing Match’s use of machine learning algorithms to pair possible mates based both on a user’s expressed preferences and their app use trends).

⁶⁸ To illustrate, approximately 65% of eHarmony and 88% of Match users are older than thirty. See Priceonomics, *Conquer Love with These Crucial Dating App Statistics*, MEDIUM (Dec. 6, 2016), https://medium.com/@sm_app_intel/conquer-love-with-these-crucial-dating-app-statistics-2870ec5493cd (providing usage statistics about various dating apps).

⁶⁹ Elyssa Kirkham, *Ranked: Most and Least Affordable Websites for Finding Your Soulmate*, HUFFPOST (last updated Dec. 6, 2017), https://www.huffingtonpost.com/gobankingrates/ranked-most-and-least-aff_b_7737422.html.

⁷⁰ Primack, *supra* note 66.

⁷¹ Grindr is another example. A user creates a profile and uploads a selfie. He can scroll through and message the fifty closest users. The grid of potential partners refreshes constantly, changing as people move around and as they log off. A user can filter profiles

user creates a profile. She uploads a picture from her vacation to Montreal, a selfie from the office, and a group shot with her friends. She says she is looking for queer women between the ages of 25 and 35 within a 15-mile radius. She is then allowed to swipe through a slew of people who fit those parameters, swiping right when she's interested and left when she's not. If both users swipe right, they can message each other.⁷²

These two business models are not exclusive. Some apps include options for both public profiles and algorithmic matching.⁷³ Other apps use algorithms to better refine users' experience on the app. Tinder, for instance, uses algorithms to determine which profiles to show users as they swipe through the pool of possibilities. The first few profiles a user sees when opening the app have been deemed "more attractive," to convince a user that attractive people are only a swipe away, and the next round of profiles tend to be "instant matches," to boost the user's confidence.⁷⁴

Limiting the market to apps that utilize one of these two business models excludes both professional matchmaking services and DIY dating options. This exclusion is necessary because neither of those options can truly substitute for a dating app.⁷⁵ Professional matchmaking is too costly to be a reasonable substitute for a dating app.⁷⁶

based on age. If he pays for the premium app, he can see more profiles and filter based on height, body type, or race. See Adam Bloodworth, *What Is Grindr? Everything You Need to Know*, PINKNEWS (Apr. 30, 2018, 1:18 PM), <https://www.pinknews.co.uk/2018/04/30/what-is-grindr-gay-dating-apps> (detailing how Grindr works).

⁷² See, e.g., Pdraig Belton, *Love and Dating After the Tinder Revolution*, BBC (Feb. 13, 2018), <https://www.bbc.com/news/business-42988025> (providing an overview of how Tinder works).

⁷³ OkCupid fit this dual model until recently. See *Why OkCupid Is Changing How You Message*, OKCUPID (last updated Jan. 4, 2018), <https://theblog.okcupid.com/why-okcupid-is-changing-how-you-message-f14d492e7853> (outlining how OkCupid limited its open profile model).

⁷⁴ See Ellen Scott, *How Does Tinder Actually Work?*, METRO (Feb. 27, 2016, 5:06 PM), <https://metro.co.uk/2016/02/27/how-does-tinder-actually-work-5721632> (describing Tinder's algorithm).

⁷⁵ The distinction between DIY, professional, and a middle-ground service has some legal support. In *United States v. H&R Block, Inc.*, the court created a similar distinction in the tax-preparation market. The court found that the market for "digital do it yourself" tax programs, like H&R Block, did not include tax accountants or pen and paper methods of tax filings. 833 F. Supp. 2d 36, 54–61 (D.D.C. 2011).

⁷⁶ Matchmaking is as old as human civilization itself. In Biblical times, Rebekah was chosen for Jacob by a servant who saw her pass the "camel test," and in ancient China, matchmakers used swallows to assess compatibility. JR Thorpe, *The History of Matchmaking, in 7 Strange Facts*, BUSTLE (Aug. 31, 2016), <https://www.bustle.com/articles/181415-the-history-of-matchmaking-in-7-strange-facts>.

Professional matchmakers in New York can range from \$1800 (for six dates) to \$25,000 (for twelve introductions).⁷⁷

DIY dating options similarly do not substitute for dating apps because apps provide more privacy and a higher probability of meeting “Mr. Right” than DIY options. First, dating apps provide enhanced privacy. The only people who can view a user’s profile are others who are using the app for similar purposes—unlike, say, lonely-hearts columns, in which hopeless romantics broadcast their availability to the whole world.⁷⁸ This permits online daters to escape any of the extant stigma attached to online dating.⁷⁹ In the same vein, users have additional privacy, stemming from the ability to block other users from messaging them or seeing their profiles. Although the extent of the blocking feature varies from app to app,⁸⁰ this feature can, in theory, help users avoid the potential embarrassment that may arise from a family member or employer seeing their dating profiles. It can further protect queer folks from outing themselves to unsupportive family or friends in their search for partnership.

Further, dating apps (theoretically) provide a greater chance of meeting people than other dating options. They offer the possibility of reaching potential partner pools outside a user’s day-to-day life. This pool of expanded options is limited to others who have signaled that they are available, and the pool can be narrowed based on gender, sexuality, and age preferences. In short, the user has more options but spends less time on dead ends.

In sum, I define the market as apps which integrate algorithmic pairing or double opt-in public profile models to reflect the substitutability of dating services. I must note that the market is perhaps defined overbroadly. The definition does not segment the market based on target market. For example, Grindr is not a substitute for

⁷⁷ See Anthony, *supra* note 65 (discussing matchmakers in New York City).

⁷⁸ Lonely-hearts columns derive from the centuries-old tradition of folks trying to mingle outside their social circle. Or, as Charles P. Hanover wrote in 1884: “I am quite anxious to marry In regard to his personal appearance, qualifications, and character, the advertiser prefers to say nothing” Pam Epstein, *F, 18, Seeks Victorian Gentleman*, N.Y. TIMES (Feb. 13, 2010), <https://www.nytimes.com/2010/02/14/opinion/14epstein.html> (listing an array of personal advertisements placed in the New York Herald dating to the 1800s).

⁷⁹ See Bibi Deitz, *Why Does Online Dating Still Carry a Stigma?*, BUSTLE (Mar. 25, 2016), <https://www.bustle.com/articles/146050-why-does-online-dating-still-carry-a-stigma> (noting that twenty-three percent of those polled agreed that “[p]eople who use online dating sites are desperate” and that forty-one percent still view it as a bad idea).

⁸⁰ See Lauren Himiak, *Online Dating Apps Need to Get Serious About Blocking*, REWIRE.NEWS (Feb. 20, 2018, 3:35 PM), <https://rewire.news/article/2018/02/20/online-dating-apps-blocking> (providing an overview of the blocking features on OkCupid, Tinder, Bumble, and Match).

eHarmony, which explicitly bans queer people.⁸¹ Tinder or Bumble, geared toward younger users, cannot substitute for SeniorsOnly or Match.com, which target older audiences.⁸²

However, a broader market definition is preferable from an anti-trust perspective for two reasons. First, defining the market too narrowly excludes the very real possibility that already successful apps can expand into new markets by slightly shifting their business strategy.⁸³ For example, eHarmony could update its business model to include queer people and compete with Grindr.⁸⁴ Second, if a market is defined too narrowly, the analysis runs the risk of inflating the market shares of relevant firms. The narrower the market definition, the easier it is to prove dominant market concentration.⁸⁵ Thus, I define the market broadly, even if narrower definitions are both possible and plausible.

2. *Dominating the Dating Market*

With the market thus defined, I turn to illustrating Match's market power within that definition. However, measuring the dominance of any dating app with precision is unfortunately an impossible endeavor given the lack of available data.⁸⁶ I rely on two imperfect means to approximate market share. The goal is to show that, by all available metrics, Match is a dominant firm and that any acquisition of a rival app should trigger antitrust scrutiny.

⁸¹ See Janet Kornblum, *eHarmony: Heart and Soul*, USA TODAY (May 18, 2005, 11:26 PM), https://usatoday30.usatoday.com/life/people/2005-05-18-eharmony_x.htm (detailing how eHarmony refuses to serve gays and lesbians); see also Sara Ashley O'Brien, *81-Year-Old eHarmony Founder on Gay Marriage and Tinder*, CNN BUS. (Feb. 12, 2016, 9:38 AM), <https://money.cnn.com/2016/02/12/technology/eharmony-neil-clark-warren/index.html> (explaining that in order to settle a lawsuit, in lieu of opening eHarmony to queer customers, eHarmony simply launched Compatible Partners exclusively for queer customers).

⁸² See Mansoor Iqbal, *Tinder Revenue and Usage Statistics (2018)*, BUS. APPS (Feb. 27, 2019), <http://www.businessofapps.com/data/tinder-statistics> (charting the popularity of dating apps by user age).

⁸³ See GUIDELINES, *supra* note 10, § 5.1 (noting that likely future entrants inform market definition).

⁸⁴ Cf. O'Brien, *supra* note 81 (noting that eHarmony created a separate platform for queer customers).

⁸⁵ Take, for example, a niche site like GlutenFreeSingles. I could define the market as: sites which match singles who have decided to exclude gluten from their diet. GlutenFreeSingles then has one hundred percent of the market share in the industry.

⁸⁶ An ideal market share assessment would track monthly active users and annual revenue within the United States. That information, unfortunately, is not publicly available.

First, I assessed market share by revenue, as is traditional in the Agencies' merger analysis.⁸⁷ A revenue-based analysis comes with two caveats: First, available data does not distinguish between United States and global revenue, and second, some firms do not consistently or publicly report revenue. For these firms, I used the most recently available data. Zoosk's revenue was last publicly reported in 2013 and eHarmony's revenue was published in 2016.

TABLE 2: MARKET SHARE BY REVENUE

Dating Firm	Dating Apps	Global Yearly Revenue	Market Share
Match Group	Tinder; Match; OkCupid; Hinge	1.7 Billion ⁸⁸	66.4%
eHarmony	eHarmony; Compatible Partners	275 Million ⁸⁹	10.8%
Bumble	Bumble; Chappy	200 Million ⁹⁰	7.8%
Zoosk	Zoosk	178 Million ⁹¹	7.0%
Spark Network	Christian Mingle; JDate	123 Million ⁹²	4.8%
Grindr	Grindr	77 Million ⁹³	3.0%
Coffee Meets Bagel	Coffee Meets Bagel	6 Million ⁹⁴	0.2%

⁸⁷ GUIDELINES, *supra* note 10, § 5.2 (noting that the Agencies typically measure market share by revenue).

⁸⁸ Match Group, Inc., Annual Report (Form 10-K) (Feb. 28, 2019).

⁸⁹ This includes revenue from eHarmony's non-dating business as well. Sai Sachin R., *Dating Site eHarmony Sees Revenue from New Job Portal Late This Year*, REUTERS (Apr. 1, 2016, 7:20 AM), <https://www.reuters.com/article/us-eharmony-website/dating-site-eharmony-sees-revenue-from-new-job-portal-late-this-year-idUSKCN0WY4GC>.

⁹⁰ Sarah Perez, *Bumble Is Taking Match Group to Court, Says It's Pursuing an IPO*, TECHCRUNCH (Sept. 24, 2018, 10:12 AM), <https://techcrunch.com/2018/09/24/bumble-serves-countersuit-to-match-group-says-its-pursuing-an-ipo>.

⁹¹ Zoosk, Inc., Registration Statement (Form S-1) (Apr. 16, 2014). This number—from 2013—likely widely overestimates Zoosk's U.S. market share. See Josh Constine, *Dating App Zoosk Destroyed by Tinder, Drops 1/3 of Staff*, TECHCRUNCH (Jan. 14, 2016), <https://techcrunch.com/2016/01/14/zoinks> (describing Zoosk's fall in popularity and long-term viability).

⁹² Spark Networks SE, Annual Report (Form 20-F) (Apr. 29, 2019).

⁹³ Rob Price, *Leaked Documents Show that Gay Social Network Grindr Is Expected to Do \$38.1 Million in Sales This Year*, BUS. INSIDER (Aug. 26, 2015, 4:48 PM), <https://www.businessinsider.com/grindr-engagement-leaked-document-ashley-madison-2015-8> (detailing that Grindr's internal documents revealed a projected revenue of \$77 million for 2018).

⁹⁴ This number is a projection based on the \$1.5 million revenue in Q1 2018. See Randy Nelson, *Dating App Coffee Meets Bagel Revenue Surpasses \$10 Million on iOS*, SENSOR TOWER (June 28, 2018), <https://sensortower.com/blog/coffee-meets-bagel-10-million-revenue-ios> (detailing Coffee Meets Bagel revenue to date).

With this allocation of market shares, the Agencies would characterize the market as highly concentrated. The pre-merger HHI would be: $66.4^2 + 10.8^2 + 7.0^2 + 7.8^2 + 4.8^2 + 3^2 + .2^2 = 4667.5$. The HHI exceeds 4500, far beyond the 2500 threshold. A merger between Bumble and Match would increase the HHI by over 1000 points.⁹⁵ That level of increase—above 200—in a highly concentrated market would clearly merit a presumption of anticompetitive effect.

A third-party industry study yielded similar results. SurveyMonkey Intelligence, a platform for measuring app performance, assessed the market shares of smartphone-based dating applications in the United States in 2016. This study, prior to Match's acquisition of Hinge, found that Match had 64% of the market share.⁹⁶ Breaking it down by app, Tinder had 25% market share, followed by PlentyOfFish (19.4%) and OkCupid (10%).⁹⁷ The closest non-Match rivals were eHarmony (9.1%), Grindr (6.3%), and Zoosk (5.8%).⁹⁸ Bumble had 3.6% of the market share, and Hinge had 1.1%.⁹⁹ With these market shares, the market is still highly concentrated with an HHI of over 4200.¹⁰⁰ A merger between Bumble and Match would equally merit the presumption of anticompetitive effect, raising the HHI by 460.¹⁰¹ What's more, the data suggest that the already-consummated merger of Hinge and Match should have triggered scrutiny. If Hinge's market share was at 1.1%, the merger raised the HHI by 140 points.¹⁰²

In sum, the publicly available dataset is inherently limited.¹⁰³ However, this Section strongly suggests that the market is highly concentrated. Under the DOJ guidelines, any merger in this industry would warrant significant scrutiny.

3. *The Longevity of Concentration*

The Agencies do not only consider current competitors, but also assess whether potential competitors mitigate the anticompetitive risks of a merger. In order to offset competitive concerns, potential entry must be “timely, likely, and sufficient in its magnitude, char-

⁹⁵ The post-merger HHI would be: $74.2^2 + 10.8^2 + 7.0^2 + 4.8^2 + 3^2 + .2^2 = 5703.4$.

⁹⁶ Priceconomics, *supra* note 68. This study is limited to smartphone apps.

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ $64^2 + 9.1^2 + 6.3^2 + 5.8^2 + 3.6^2 + 1.1^2 = 4266$.

¹⁰¹ $67.6^2 + 9.1^2 + 6.3^2 + 5.8^2 + 1.1^2 = 4727.3$.

¹⁰² $65.1^2 + 9.1^2 + 6.3^2 + 5.8^2 + 3.6^2 = 4407.3$.

¹⁰³ The Agencies have the authority to request information to more accurately delineate the market share. GUIDELINES, *supra* note 10, § 2.2.1. Such information could include annual revenue in the United States and monthly active users.

acter, and scope.”¹⁰⁴ This Section argues that although new entry in the dating app market is possible, successful entry is too difficult and speculative to sufficiently limit Match’s market power.

The barriers to entering the dating app market may seem low. The cost of creating a new app does not bar new competitors, and digital titans, like Facebook or Google, already have complementary industry capabilities which could permit them to become the next Tinder. In fact, Facebook announced its intention to enter the dating app market¹⁰⁵ and launched the beta of its in-app dating feature in 2018,¹⁰⁶ receiving mixed reviews at best.¹⁰⁷ But successful entry into the market is limited by several factors: network effects, the uncertain patentability of digital features (like the swipe), and the unpredictable nature of digital markets.

Dating apps implicate network effects,¹⁰⁸ which arise when the value of a service increases with each additional user on the service.¹⁰⁹ Telephones provide the classic example: The more people with access to phones, the more valuable a telephone service is to any given consumer.¹¹⁰ Dating apps run on a similar model. The value of the app is directly correlated with the size of the potential partner pool. A dating app needs to attract a critical mass of consumers before the app becomes valuable to any individual consumer.

Further, dating apps involve a particularly severe form of network effects: localized effects. Many networks are location-neutral. That is, the network gains value from each additional user, regardless of where that user lives. YouTube is a classic example. Users gain value from each additional content creator on the site whether they

¹⁰⁴ *Id.* § 9. The Agencies have not defined “timely” or “likely” with any precision.

¹⁰⁵ See Sam Levin, *Facebook Announces Dating App Focused on ‘Meaningful Relationships,’* GUARDIAN (May 1, 2018, 5:07 PM), <https://www.theguardian.com/technology/2018/may/01/facebook-dating-app-mark-zuckerberg-f8-conference>.

¹⁰⁶ See Kari Paul, *Facebook Dating Makes Its Debut,* MARKETWATCH (Sept. 22, 2018, 9:12 AM), <https://www.marketwatch.com/story/who-will-use-facebook-to-find-love-2018-05-02>.

¹⁰⁷ See *id.* (describing that Facebook Dating’s audience will likely skew older and noting that Facebook’s mishandling of consumer data still looms in people’s minds); see also Ebony-Renee Baker, *I Tried Facebook’s New Dating App and It Was Exhausting,* VICE (Nov. 28, 2018, 8:57 PM), https://www.vice.com/en_au/article/nep3v7/i-tried-facebooks-new-dating-app-and-it-was-exhausting (criticizing Facebook Dating).

¹⁰⁸ See Andrei Hagiu & Simon Rothman, *Network Effects Aren’t Enough,* HARV. BUS. REV. (Apr. 2016), <https://hbr.org/2016/04/network-effects-arent-enough> (discussing network effects in social media).

¹⁰⁹ See generally Gregory J. Werden, *Network Effects and Conditions of Entry: Lessons from the Microsoft Case,* 69 ANTITRUST L.J. 87, 89–93 (2001) (providing an in-depth analysis of network effects).

¹¹⁰ See, e.g., *id.* at 89 (using telephone services as the paradigmatic example of network effects).

live in Seattle or New York. Dating app networks, on the other hand, are largely localized. A Tinder user in New York gains no value from each additional user in Seattle.¹¹¹ Thus, even a firm which captures an initially large user base may not capture critical mass in any individual region, serving as a heightened barrier to entry. Alternatively, an app may capture critical mass only in a single region and consequently not compete against larger dating app firms in a meaningful sense.

New entry is further limited by the possibility that entrenched firms can validly patent popular features. Commentators initially balked at the idea that Tinder could patent something as simple as the swipe or the match.¹¹² But the swipe was granted a patent in 2013, along with Tinder's "double blind opt-in" match—the feature which requires both users to signal interest before they are able to send a message.¹¹³

The question remains, however, whether a court would uphold the validity of the patents if challenged. In 2018, Tinder sued Bumble for patent infringement, and Bumble moved to dismiss the case, arguing that the patent was invalid.¹¹⁴ The court denied the motion to dismiss.¹¹⁵ It noted that the swipe right improvement "has been a commercial success because it has increased 'the speed of a user's navigation through [potential matches],' which is apparently important to a substantial number of people who are interested in meeting other people via the internet."¹¹⁶ Although a denial of a motion to dismiss does not necessarily reflect on the merits of the case,¹¹⁷ the court seems to be taking digital patents more seriously than commentators originally anticipated.

But patents do not need to be affirmatively upheld to have anticompetitive effects. Uncertainty will itself deter new entrants. Indeed, scholars have argued that "[t]he mere presence of a patent

¹¹¹ See Jennifer B., *Tinder: The Dark Side of Network Effects*, HARV. BUS. SCH.: DIGITAL INITIATIVE, <https://digit.hbs.org/submission/tinder-the-dark-side-of-network-effects> (last updated Oct. 19, 2015) (describing local network effects).

¹¹² See Josh Landau, *Courts Will Swipe Left on Tinder's Suit Against Bumble*, PATENT PROGRESS (Mar. 23, 2018), <https://www.patentprogress.org/2018/03/23/courts-will-swipe-left-on-tinders-suit-against-bumble> (arguing that Tinder's patent claim has "more than just surface flaws").

¹¹³ See Primack, *supra* note 66.

¹¹⁴ See Domonoske, *supra* note 3.

¹¹⁵ Match Grp., LLC v. Bumble Trading Inc., No. 6:18-cv-00080-ADA, at *1 (W.D. Tex. Dec. 18, 2018).

¹¹⁶ *Id.* at *10 (alteration in original).

¹¹⁷ *Id.* at *12 ("Where a motion to dismiss is based on a claim of patent ineligible subject matter, dismissal will generally be unwarranted unless the 'only plausible reading of the patent must be that there is clear and convincing evidence of ineligibility.'" (quoting JSDQ Mesh Techs. LLC v. Fluidmesh Networks, LLC, No. 16-cv-212-GMS, 2016 WL 4639140, at *1 (D. Del. Sept. 6, 2016))).

distorts markets even if the patent-holder takes no affirmative steps to enforce the patent.”¹¹⁸ The threat of litigation chills competition.¹¹⁹ The existence of a patent increases investment costs on new entrants. Put simply, a new firm would need to research the validity of the patent, determine whether their product would infringe on the patent, and convince investors of those facts.¹²⁰

A final barrier to entry is difficult to predict or quantify: luck. Success in digital spaces is about the ability to go viral, to create a service that is novel and captures the attention of a critical mass of people. Even the most sophisticated digital firms have failed in this endeavor. Google’s failure to break into the social media market provides a helpful example. Google appeared poised to launch a successful social media platform. It had ubiquitous name recognition, endless capital, and a seemingly unflinching ability to break into new markets, including email, advertisements, and map services.¹²¹ A social media platform could complement Google’s preexisting platforms including YouTube and Blogger. But when Google+ launched in 2011, it sank.¹²² A redesign in 2014 failed.¹²³ A privacy breach in 2018 became the final nail in the coffin.¹²⁴ Google’s capital and experience in the tech world did not translate into social media success.

Breaking into the U.S. dating app market has proven to be similarly difficult. Take Badoo. In late 2018, Badoo surpassed over 400 million global users.¹²⁵ But those users are predominately located

¹¹⁸ Christopher R. Leslie, *The Anticompetitive Effects of Unenforced Invalid Patents*, 91 MINN. L. REV. 101, 113 (2006).

¹¹⁹ *Id.* at 116 (“Judge Learned Hand famously analogized a suspect patent to a scarecrow with the ability to deter competitors even without infringement litigation.”).

¹²⁰ *Id.*

¹²¹ See Nicholas Carlson, *A List of Products Larry Page Has Google Working on Other than Search, Such as Spoons*, BUS. INSIDER (Sept. 22, 2014, 5:29 PM), <https://www.businessinsider.com/a-list-of-google-products-2014-9> (listing Google’s full roster of services).

¹²² See Seth Fiegerman, *Inside the Failure of Google+, a Very Expensive Attempt to Unseat Facebook*, MASHABLE (Aug. 2, 2015), <https://mashable.com/2015/08/02/google-plus-history>.

¹²³ *Id.*

¹²⁴ Julia Carrie Wong & Olivia Solon, *Google to Shut Down Google+ After Failing to Disclose User Data Leak*, GUARDIAN (Oct. 12, 2018, 7:39 PM), <https://www.theguardian.com/technology/2018/oct/08/google-plus-security-breach-wall-street-journal>.

¹²⁵ See Amit Chowdhry, *Social Media Roundup: Facebook 3D Photos, Google+ Shutting Down, Instagram Prevent Bullying with AI*, FORBES (Oct. 14, 2018, 10:24 PM), <https://www.forbes.com/sites/amitchowdhry/2018/10/14/social-media-roundup-facebook-3d-photos-google-shutting-down-instagram-prevents-bullying-with-ai>; see also Dominic Whitlock, *Badoo Reaches 400 Million User Milestone*, GLOBAL DATING INSIGHTS (Sept. 7, 2018), <https://www.globaldatinginsights.com/news/badoo-reaches-400-million-user-milestone>.

outside of the United States.¹²⁶ Despite an expensive and well-publicized U.S. launch in 2012,¹²⁷ Badoo has gained little traction.¹²⁸

In sum, the barriers to entry in the dating market—network effects, potential patentability, and the unpredictability of even sophisticated firms gaining traction—will continue to entrench these firms. Indeed, the proof may be in the pudding: Match has remained the dominant firm for twenty-five years.¹²⁹ The lasting stability in this industry implies that the ease of entry argument is overstated, and that entry in the market isn't "likely" or "timely" enough to sufficiently limit the anticompetitive effects of a merger.

II

THE QUALITY AND PRICE RISKS OF CONCENTRATION IN THE DATING APP INDUSTRY

The previous Part argued that the dating app market is highly concentrated and that the concentration is likely to persist despite the apparent ease of entry. Consequently, a merger combining Match with a rival firm should trigger a presumption of anticompetitive effect. But a mere presumption is insufficient. Even if the Agencies deem a merger presumptively anticompetitive or worthy of further scrutiny, their job would not be done. The Agencies must then assess 1) whether any anticompetitive effect will actualize at all, and 2) whether efficiencies created by the merger outweigh any anticompetitive harm.¹³⁰

Part II argues that a merger between Match and any of its competitors will likely result in anticompetitive effects that cannot be offset by efficiencies the merger may create. Sections II.A and II.B argue that a merger would enhance the firm's ability to engage in targeted price hikes and to decrease the quality of its app—two arguments which apply existing antitrust analysis to a new industry.

¹²⁶ See Curtis Silver, *Dating App Study Shows You Probably Deleted Tinder on the First Day*, FORBES (Feb. 14, 2018, 9:10 AM), <https://www.forbes.com/sites/curtissilver/2018/02/14/dating-app-study-tinder-badoo-grindr-online> (noting that Badoo was the highest-ranked dating app in Europe but "doesn't even make the top five apps in the states"); Pascal-Emmanuel Gobry, *Badoo, Not Just for Teens Who Want to Hook Up, Hits 122 Million Users*, BUS. INSIDER (Jul. 25, 2011, 3:29 PM), <https://www.businessinsider.com/badoo-2011-7> (explaining that Badoo was not well known in the United States).

¹²⁷ Brian Anthony Hernandez, *Social Network Badoo Officially Launches in U.S. with Nick Cannon*, MASHABLE (Mar. 23, 2012), <https://mashable.com/2012/03/23/badoo-us>.

¹²⁸ See *The Dating Game: Which Dating Apps Are Winning the Hearts of the World?*, BBC (Feb. 12, 2016), <https://www.bbc.co.uk/news/resources/idt-2e3f0042-75f6-4bd1-b4fe-9056540c65f8> (diagramming the popularity of dating apps by country).

¹²⁹ See *supra* Section I.B.2 (describing concentration in the market).

¹³⁰ GUIDELINES, *supra* note 10, §§ 2.1, 10.

Section II.C argues that dating app mergers present no cognizable efficiencies (or benefits) that will be passed on to consumers.

A. *Quality Deterioration*

A monopolist in the dating app industry has no incentive to compete on the basis of quality of the app and service provided. Quality considerations are increasingly important in zero-priced markets. In late November 2018, the Organisation for Economic Co-operation and Development (OECD) held a discussion concerning quality competition in zero-priced markets.¹³¹ The United States' submission to the discussion stated that "quality may be particularly significant for competition when products and services are supplied at zero price."¹³² It continued to state that "U.S. antitrust and consumer protection laws apply in full to zero-priced products and services, and to the markets in which such products and services are supplied."¹³³

This Section offers suggestions for how agencies could assess quality deterioration in the dating app market. Quality is notoriously difficult to quantify,¹³⁴ and these difficulties apply in force to the dating app market. A user cannot reasonably say dating apps are deteriorating in quality because they are still single.

Agencies can look to the quality of the features or customer service provided to users of the app. Take the blocking feature for example. As mentioned, apps generally provide users with the ability to block other users on the app. This can be a useful feature for online daters who wish to avoid seeing their family or coworkers or their exes. More dramatically, it can protect queer individuals who wish to avoid outing themselves and those who have escaped abusive or violent relationships in the past. But, although the blocking feature appears promising, it has proven to be largely ineffectual in practice.¹³⁵ The apps that do offer a robust blocking system—like OkCupid, which permits users to keep their profile hidden unless they message or signal interest in another user—often charge for it.¹³⁶

¹³¹ DIRECTORATE FOR FIN. & ENTER. AFFAIRS COMPETITION COMM., ORG. FOR ECON. CO-OPERATION & DEV., *QUALITY CONSIDERATIONS IN THE ZERO-PRICE ECONOMY—NOTE BY THE UNITED STATES* (2018), [https://one.oecd.org/document/DAF/COMP/WD\(2018\)139/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)139/en/pdf).

¹³² *Id.* at 3.

¹³³ *Id.* at 2.

¹³⁴ *See id.* at 3 (“‘Quality’ itself is a complex concept that should be defined broadly and inclusively by antitrust courts and agencies. It is probably neither possible nor desirable to arrive at a detailed taxonomy or closed list of cognizable forms of quality . . .”).

¹³⁵ *See* Himiak, *supra* note 80 (describing the weaknesses of various apps' blocking features).

¹³⁶ *See id.*

Blocking is not the only feature that implicates quality concerns. Dating app firms can reduce the number of profiles a user is able to view at one time.¹³⁷ They can decrease either the quality or the quantity of profile information: the amount of photos a user can upload, the character limit in a bio, or the number of questions on a profile.

Without competition, a dating app firm would not improve, or even maintain the same quality of, the algorithms used to pair users. These companies have perverse incentives: They only profit off users currently using the app, not those who find their soulmates and leave the app. A firm has the ability to experiment with its pairing algorithms to find the most profitable trade-off where consumers still feel that apps are valuable while remaining on the app as long as possible. A firm could reduce the quantity of matches, so a user spends more time on the app before finding any match. The firm could alternatively prioritize lower-quality matches. In that case, either the match would be unlikely to satisfy the user or the date would not result in either party leaving the app. In a competitive market, however, firms could advertise the frequency of matches and the success rate of those matches.

Apps could also compete on the number of ads shown to users. Although dating apps largely rely on revenue from subscription fees, advertising has become an increasingly important source of revenue.¹³⁸ “For consumers in many zero-priced markets, money is replaced by attention—these consumers literally *pay attention*.”¹³⁹ At the same time, the apps cannot run too many ads or users will defect from the app. In a competitive market, users could, and likely would, choose the app that provides the most content and the fewest ads. However, in a concentrated market where users have few alternatives, apps can show a greater quantity of ads before triggering consumer defection. Indeed, a dominant dating app firm may increase the number of ads not only to raise more advertising revenue, but to push users into subscription-based models.

¹³⁷ Coffee Meets Bagel, for example, limits the number of profiles a user sees per day. Alex Bocknek, *How Does Coffee Meets Bagel Work: A Beginner's Guide*, Zoosk (July 16, 2018), <https://www.zoosk.com/date-mix/online-dating-advice/how-does-coffee-meets-bagel-work>.

¹³⁸ “Over the past six months alone, ad revenue at Grindr, the leading location-based dating app in the gay community, has grown 65 percent . . .” Lauren Johnson, *Brands Make a Match with Dating Apps*, ADWEEK (May 19, 2015), <https://www.adweek.com/digital/brands-make-match-dating-apps-164805> (describing how dating apps are increasingly using advertisement to provide additional revenue).

¹³⁹ Newman, *supra* note 24, at 172 (arguing that advertisements are an aspect of price in zero-priced markets).

In all, a dominant dating app firm has no incentive to compete on the quality of the dating app. This can result in poorly executed features, profit-maximizing algorithms, and an increased number of advertisements.

B. Price Discrimination

A monopolist dating firm has the power to price discriminate—that is, the firm can engage in targeted price hikes on the subset of consumers who are willing to pay for the service. Price discrimination is a pricing strategy in which largely similar goods are priced at differential rates depending on the individual consumer’s willingness to pay.¹⁴⁰ The basic idea is that consumers value products or services differently: Consumer 1 may be willing to pay \$200 for a flight, but Consumer 2 will pay up to \$400. If a firm could price discriminate, it would charge each consumer more depending on their willingness to pay. Normally, competition limits a firm’s ability to price discriminate. If it hikes the price on a subset of consumers, its competitors can undercut those prices.

Price discrimination is not a novel consideration in merger analysis.¹⁴¹ When assessing the anticompetitive effects of a merger, the Agencies will “consider whether those effects vary significantly for different customers purchasing the same or similar products.”¹⁴² In short, the Agencies will analyze whether a merger enhances the power of the merged firm to raise prices on select customers. The Agencies outline two prerequisites to price discrimination. First, the firm must be able to triangulate which consumers are willing to pay more for the product.¹⁴³ Second, the consumer must not be able to engage in arbitrage.¹⁴⁴ Arbitrage is the ability of a consumer to escape the price hike through indirect purchase.¹⁴⁵

¹⁴⁰ See GUIDELINES, *supra* note 10, § 3.

¹⁴¹ The Agencies successfully challenged three mergers in 2015 and 2016 by using price discrimination to establish a narrower product market comprised of only a subset of consumers. See Ryan Leske & Jon B. Dubrow, *Price Discrimination Markets Lead Antitrust Enforcers to Increased Success*, LEXOLOGY (Aug. 8, 2016), <https://www.lexology.com/library/detail.aspx?g=c5fde4ac-2f74-41cb-bf7f-ab1eb8f8abd9> (describing the use of price discrimination markets in *FTC v. Sysco Corp.*, *United States v. AB Electrolux*, and *FTC v. Staples, Inc.*); see, e.g., *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 38–40 (D.D.C. 2015) (defining relevant market as one “for broadline products sold to national customers” based on limited options for national customers).

¹⁴² GUIDELINES, *supra* note 10, § 3.

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.* For example, if a firm charged Consumer A \$5 for a widget, and charged Consumer B \$10 for a widget, Consumer B may be able to purchase the widget from Consumer A for a price above \$5 but under \$10. This is arbitrage.

Although price discrimination is a recognized element of merger analysis, the antitrust literature has not yet applied price discrimination to zero-priced markets.¹⁴⁶ This is perhaps unsurprising. If the price is zero, by definition, there can be no price discrimination. This argument tracks even when these firms charge optional fees or adopt a “freemium model.” In freemium models, as seen in apps like Drop Box and LinkedIn, the use of the app is free but the consumer pays for premium features.¹⁴⁷ This pricing model generally does not present price discrimination concerns. If an app’s premium model becomes too expensive, users will turn to the free version. Put another way, recall that price discrimination has two prerequisites. The first requirement, that the firm can determine which customers are willing to pay more, is easily satisfied. Firms can track IP addresses of customers,¹⁴⁸ and they can determine which customers defect when they raise the price. But the second prong relies on the consumer being unable to avoid the price hike through indirect purchase. Even though indirect purchase is largely unworkable in digital markets, the ability of a consumer to defect to the free app may serve as the digital analog to arbitrage. That is, consumers can avoid price hikes simply by not paying.

However, the dating app market reveals that in some circumstances a freemium firm may be able to engage in targeted price hikes. Initially, dating apps have adopted the freemium pricing model with roaring success. Some apps offer one-time purchases. These, for example, let a user pay to boost their profile on the app, or “undo” a swipe (in case they hastily swiped left on the love of their life).¹⁴⁹ Alternatively or concurrently, apps have adopted subscription tiers on top of the free baseline model. For example, in 2017, Tinder introduced Tinder Gold, which allowed users to pay to see who “swiped right” on them.¹⁵⁰ As a result, Tinder became the top grossing iPhone

¹⁴⁶ Even scholars advocating for a rigorous application of antitrust analysis to zero-priced markets have neglected the possibility of price discrimination in freemium models. See Newman, *supra* note 24, at 154, 157 (discussing the freemium model).

¹⁴⁷ See Vineet Kumar, *Making “Freemium” Work*, HARV. BUS. REV., May 2014 (describing the freemium model).

¹⁴⁸ See *infra* Section III.A (discussing the types of data dating apps collect).

¹⁴⁹ See Julia Pugachevsky, *Are Tinder Plus and Tinder Gold Actually Worth the Extra Money?*, COSMOPOLITAN (Dec. 13, 2018), <https://www.cosmopolitan.com/sex-love/a25574020/tinder-gold-vs-tinder-plus> (giving an overview of Tinder’s paid features).

¹⁵⁰ Natt Garun, *Tinder Becomes Top-Grossing iOS App After Letting People Pay to See Who Likes Them*, VERGE (Sept. 1, 2017, 12:02 PM), <https://www.theverge.com/2017/9/1/16240348/tinder-gold-top-grossing-app-store-paid>.

app in the world.¹⁵¹ By the end of 2018, Tinder would have over 4.1 million paying subscribers.¹⁵²

To generalize, there are two types of consumers willing to pay for dating apps—price-sensitive and price-insensitive—and each present varying levels of price discrimination concerns. Price-sensitive consumers are willing to pay for a dating app, but only for the cost of a cup of coffee per month. They don't mind paying a few dollars a month for the advanced features, but they will stop paying if the app charges too much. If a premium version costs too much, price sensitive consumers will defect to the free version. This is not to say that price discrimination against these consumers is impossible. A dominant app firm can slightly increase the price of its premium models and calculate its exact profit or loss on that increase, while remaining confident that any user who defects from the premium version will be caught in a web of free alternatives the firm still controls.

Price-insensitive consumers, on the other hand, present a heightened risk of price discrimination. By definition, price-insensitive consumers are willing to spend more for the possibility of meeting a partner. The potential price discrimination against these customers requires recognition of an unpleasant reality: Not all users are equally able to find partners, and some may be willing (or feel socially forced to) pay more to find new, more, or better options. Or, to paraphrase Justice Kennedy, premium dating apps respond “to the universal fear that a lonely person might call out only to find no one there.”¹⁵³ Dating apps have already begun to capitalize on these feelings. Tinder lets consumers pay to “feature” their profile, so more potential matches will see them.¹⁵⁴ Coffee Meets Bagel co-founder Dawoon Kang has claimed that men who pay for a subscription have “a 43 percent higher number of connections (mutual likes) than non-payers” and 12% longer conversations.¹⁵⁵ OkCupid offers a Premium A-list for up to \$25 a month which provides, among other things, the ability to see or be seen by more attractive people.¹⁵⁶ Thus, firms are able to raise prices on the consumers whose social circumstances

¹⁵¹ *Id.*

¹⁵² Kate Clark, *Tinder Now Has 4.1M Paying Users, Expects \$800m in Revenue This Year*, TECHCRUNCH (Nov. 6, 2018), <https://techcrunch.com/2018/11/06/tinder-now-has-4-1m-paying-users-expects-800m-in-revenue-this-year>.

¹⁵³ *Obergefell v. Hodges*, 135 S. Ct. 2584, 2600 (2015).

¹⁵⁴ Pugachevsky, *supra* note 149.

¹⁵⁵ Molly Kay, *It's Almost Never Worth Spending Money for a Dating App*, VICE (June 29, 2018, 8:07 AM), https://free.vice.com/en_us/article/9k8xk8/dating-apps-tinder-gold-bumble-boost.

¹⁵⁶ *Id.*

incentivize the purchase of a premium version that promises more success.

Moreover, dating app firms can price discriminate against both groups simultaneously by creating a two-tiered subscription model, as Tinder has.¹⁵⁷ This model permits firms to create one layer of pricing for price-sensitive customers and a separate layer—perhaps more explicitly dedicated to increased success—for the consumers willing to pay more to find love.

In sum, without competition to curb pricing power, a dominant dating app firm can hike prices for the subset of consumers willing to pay for the app. This is even more troubling given a dominant firm's ability to play the field. A firm can raise the prices of one model without fear of losing consumers. If Tinder becomes too expensive, a consumer would likely switch to Hinge, OkCupid, or any of the alternative apps in the dominant firm's catalog. This permits the firm to experiment with price and extract the maximum value from each consumer.

C. *Efficiencies*

When assessing whether to challenge a merger, the Agencies weigh whether the merger offers merger-specific efficiencies.¹⁵⁸ If the merger creates efficiencies that result in cost savings or other benefits that are passed down to consumers, the Agencies are less likely to challenge the merger.¹⁵⁹ This Section argues that the efficiencies created by a dating app merger—specifically, the network efficiencies—will not sufficiently benefit consumers.

Digital mergers often create network efficiencies. Recall that network effects arise when the value of a service increases with each additional user.¹⁶⁰ This serves as a barrier to entry for new competitors. But it may equally provide benefits to consumers. A dating app firm may be able to create network efficiencies that benefit consumers by consolidating dating apps. Currently users have access to multiple apps (but have limited access to information as to which apps are most frequently used by other singles). This choice may harm consumers counterintuitively. If the value of the company is the value of the network, the value to consumers decreases the more alternative apps available. To illustrate, let's assume that there are currently five apps that a single person may use to find other prospective matches. Users

¹⁵⁷ See Pugachevsky, *supra* note 149 (describing Tinder's dual-tier pricing model).

¹⁵⁸ See GUIDELINES, *supra* note 10, § 10.

¹⁵⁹ *Id.* § 10, at 30–31.

¹⁶⁰ See *supra* Section I.B.3.

can download any number of the five apps and can apportion their time accordingly to each. The value to consumers of each app depends on two variables:

- 1) The value to consumers of each app generally *increases* based on the number of *unique* users on that app, but
- 2) The value to consumers of each app *decreases* slightly based on the number of *duplicate* users on each app.

For example, User 1, Adrian, downloads Tinder. From his perspective, each user on that app presents a possibility for a match. He (ex ante) gains value equally from Jon and Marcus, fellow users and potential matches. But when Adrian downloads Hinge, he only gains value from the users on Hinge who are not also on Tinder. If Jon also uses both apps, Adrian gains no additional value from Jon's use of Hinge. In fact, Hinge may *lose* value, from Adrian's perspective, from the duplicative presence of Jon. The time a user spends on an app is limited. The more duplicative users on an app, the more time Adrian "wastes" swiping through incompatible matches. Thus, if a dating app firm could consolidate the number of apps available, the firm could create a network efficiency for consumers.

However, efficiency gain is unlikely to materialize in practice. First, the value gained from each additional user is not constant. Like all things in life, love has diminishing marginal returns. At some point, too many users will be on the app, creating a two-sided paradox of choice.¹⁶¹ The more options users have, the less satisfied they may be with any single choice. This "grass is always greener" effect combines with the competition effect: the more users on the app, the more competitors for potential mates.

Second, and more fundamentally, the efficiency gain will not occur because a dominant dating app firm has no incentive to consolidate its apps. Take Match. Despite having purchased twenty-five dating sites in the past decade and being the dominant player in the United States,¹⁶² Match continues to run over forty-five distinct apps.¹⁶³ The running of often duplicative apps could provide several benefits to Match. As mentioned in Section II.B discussing price discrimination, it may permit Match to more effectively experiment on pricing strategies without losing consumers.¹⁶⁴ It may capitalize on users' tendency to download and operate several dating apps simulta-

¹⁶¹ See Ellie Krupnick, *Is Too Much Choice Ruining Dating? Science Might Have the Answer*, MIC (Jan. 23, 2015), <https://mic.com/articles/107210/is-too-much-choice-ruining-dating-science-might-have-the-answer> (applying the paradox of choice to dating apps).

¹⁶² See *supra* notes 4–7 and accompanying text.

¹⁶³ Carman, *supra* note 9.

¹⁶⁴ See *supra* Section II.B.

neously.¹⁶⁵ The appearance of multiple competitors may itself serve as a barrier to entry if potential entrants believe the market is already saturated.

In sum, the network efficiencies created by a merger of dating apps would materialize only if the dominant dating app firm consolidated its existing apps. This is not only an implausible outcome but it also creates improper incentives. First, as discussed above, firms are unlikely to consolidate their apps, so these network advantages are theoretical. Second, and more fundamentally, this argument rests on the assumption that consolidation is itself a positive good. Instead of finding that a concentrated market is likely to harm consumers, this argument posits that a consolidated market *benefits* consumers and that competition *harms* consumers. It also suggests no stopping point, justifying mergers leading to single firm markets in this industry. Indeed, it would permit firms to widely acquire to kill, meaning that the dominant firm can purchase a competitor for the sole purpose of avoiding competition.

III

DATA PRIVACY RISKS OF CONCENTRATION

Part II centered around traditional antitrust concerns of price and quality to argue that decreased competition in the dating app market can harm consumers. Part III examines a different potential consumer harm that cannot neatly be categorized as either price or quality: data security. Data security resembles price in one sense because apps sell consumer data. But it also resembles quality: Apps can compete on measures to better ensure consumer privacy protections. I argue that antitrust policy can mitigate data privacy concerns unique to dating app firms. First, dating apps collect (and often sell or share) incredibly intimate and surprisingly extensive information about people's dating life. Second, dating apps are capable of competing on privacy in a variety of ways.

A. *The Data Collected by Dating App Firms*

Nearly every app from Google Maps to Angry Birds collects some level of information about the user.¹⁶⁶ At a general level, this

¹⁶⁵ See Kristine Fellizar, *How Many Dating Apps Should You Be On? This Is What the Experts Think*, BUSTLE (June 24, 2016), <https://www.bustle.com/articles/166491-how-many-dating-apps-should-you-be-on-this-is-what-the-experts-think> (noting that many users download multiple dating apps).

¹⁶⁶ See, e.g., James Ball, *Angry Birds and 'Leaky' Phone Apps Targeted by NSA and GCHQ for User Data*, GUARDIAN (Jan. 28, 2014, 2:51 PM), <https://www.theguardian.com/world/2014/jan/27/nsa-gchq-smartphone-app-angry-birds-personal-data> (reporting that the

data is the currency of the digital economy.¹⁶⁷ Users receive free or subsidized access to digital services (for example, apps, social media, search engines) and, in exchange, digital firms extract and profit off their data.¹⁶⁸ Or, as the aphorism goes, “If you’re not paying, you are the product.”¹⁶⁹ Dating apps are no different. Some level of data collection is routine, or even required, for an app. Tinder, for example, requires users to provide some data as a precondition for using the app, such as registering with a Facebook account or phone number.¹⁷⁰ If users choose to go with their Facebook account, Tinder may be able to collect additional personal information.¹⁷¹

But dating apps also collect uniquely intimate information about users’ relational and sexual lives, and they often collect more information than users are aware of.¹⁷² Of course, the data collection is entirely voluntary. Users may refuse to download an app or register for an account. They may similarly choose what information to provide on their public profiles or in messages to other users. No matter what, a great deal of intimate information is shared with the app developers.

In this Section, I describe three concerns with dating app data collection: the type and amount of data collected, the parties with access to the data, and the level of security provided to the data.

NSA has been able to take advantage of apps that collect data); Lisa Gutermuth, *How to Understand What Info Mobile Apps Are Collecting About You*, SLATE (Feb. 24, 2017, 11:01 AM), <https://slate.com/technology/2017/02/how-to-understand-what-info-mobile-apps-collect-about-you.html> (noting the various personal information collected by apps); Jennifer Valentino-DeVries et al., *Your Apps Know Where You Were Last Night, and They’re Not Keeping It Secret*, N.Y. TIMES (Dec. 10, 2018), <https://www.nytimes.com/interactive/2018/12/10/business/location-data-privacy-apps.html> (noting that many apps collect users’ location data).

¹⁶⁷ See *Data Is Giving Rise to a New Economy*, ECONOMIST (May 6, 2017), <https://www.economist.com/briefing/2017/05/06/data-is-giving-rise-to-a-new-economy> (calling data the “[f]uel of the future”).

¹⁶⁸ See *id.* (describing how Facebook and Google profit off of consumer data).

¹⁶⁹ Gutermuth, *supra* note 166; see also Nathan Newman, *You’re Not Google’s Customer—You’re the Product: Antitrust in a Web 2.0 World*, HUFFPOST (Mar. 29, 2011, 9:51 AM), https://www.huffpost.com/entry/youre-not-googles-customer_b_841599.

¹⁷⁰ See, e.g., *How Do I Create a Tinder Account?*, TINDER, <https://www.help.tinder.com/hc/en-us/articles/115003356706-How-do-I-create-a-Tinder-account-> (last visited June 1, 2019) (outlining how to make a Tinder account).

¹⁷¹ *Id.*

¹⁷² Judith Duportail, *I Asked Tinder for My Data. It Sent Me 800 Pages of My Deepest, Darkest Secrets*, GUARDIAN (Sept. 26, 2017, 2:10 PM), <https://www.theguardian.com/technology/2017/sep/26/tinder-personal-data-dating-app-messages-hacked-sold> (noting that many Tinder users are willing to disclose information without realizing it).

1. Data Collection Policies

A brief survey of dating app privacy policies reveals the level of data collection in the abstract. I read the nearly identical privacy policies of three major dating apps—Tinder,¹⁷³ Bumble,¹⁷⁴ and Grindr¹⁷⁵—to categorize the types of data collected. Dating apps collect:

- Potentially sensitive classifications (for example, race, sexual orientation, and religious beliefs)
- Personal information (for example, details about users' personality, lifestyle, and interests)
- Pictures and videos
- Chats between users
- Usage information (for example, interaction with other users)
- Identifying information (for example, IP addresses and "identifiers associated with cookies")¹⁷⁶

But data is difficult to visualize in the abstract. It's invisible. Fortunately, due to the General Data Protection Regulation framework in the European Union (EU) put in place in 2018,¹⁷⁷ we know exactly what data is collected. In 2017, a Tinder user in Paris asked the dating app firm to reveal her data portfolio.¹⁷⁸ The EU data protection law required Tinder to comply.¹⁷⁹ She received 800 pages in return.¹⁸⁰ She learned that she opened up the app 920 times and matched with 870 different users.¹⁸¹ She saw the ages of men she had dated. She could read through the 1700 messages she sent: spanning her first "Hello!" in 2013 to her "hopes, fears, sexual preferences and deepest secrets."¹⁸² Of course, she had directly provided this information, as millions of other online daters do. When creating an account, a user has the option to limit their potential partners to those in a certain age range, sexuality, gender, and mile radius. Apps collect this informa-

¹⁷³ *Our Commitment to You*, TINDER, <https://www.gotinder.com/privacy> (last visited June 1, 2019).

¹⁷⁴ *Privacy Policy*, BUMBLE, <https://bumble.com/privacy> (last visited June 1, 2019).

¹⁷⁵ *Grindr Privacy and Cookie Policy*, GRINDR, <https://www.grindr.com/privacy-policy> (last visited June 1, 2019).

¹⁷⁶ See, e.g., *Our Commitment to You*, *supra* note 173 (laying out the types of data collected by Tinder).

¹⁷⁷ See Arielle Pardes, *What Is GDPR and Why Should You Care?*, WIRED (May 24, 2018, 6:00 AM), <https://www.wired.com/story/how-gdpr-affects-you> (outlining the European General Data Protection Regulation).

¹⁷⁸ Duportail, *supra* note 172.

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² *Id.*

tion, along with the messages users send to one another—messages that the apps apparently store for years.

But the information the app collects can be even more personal, more invisible. Invisible here is, of course, not a reference to the men you've ghosted recently¹⁸³ (though Tinder knows that, too).¹⁸⁴ It also knows “how often you connect and at which times; the percentage of white men, black men, Asian men you have matched; which kinds of people are interested in you; which words you use the most; how much time people spend on your picture swiping you, and so on.”¹⁸⁵

2. *Data Sharing Policies*

Dating app firms generally reserve the right to share this information with three main categories of people: other users, companies within the apps' corporate family, and third-party firms. First, users can voluntarily share information with other users on the app through their public profile or through messages. This is hopefully not surprising. Users open themselves up to some privacy risks simply by creating a profile or talking to other online daters. Their profile can be viewable by anyone using the app, subject to exceptions that vary on each app (for example, distance, sexuality, and whether the user has been blocked). Messages are only viewable by the recipient.¹⁸⁶ This is not without risk. Fake accounts abound. There are many fish in the sea but beware of the catfish—a user who adopts a fictional persona online. Catfish accounts have varying purposes. They can send advertisements or spam messages.¹⁸⁷ Or, more nefariously, they can be used for blackmail¹⁸⁸ or to tear down political opponents.¹⁸⁹

¹⁸³ To “ghost” someone is to “suddenly end[] all contact with a person without explanation, especially in a romantic relationship.” Jane Solomon, *What Is Ghosting*, DICTIONARY.COM, <https://www.dictionary.com/e/ghosting> (last visited Aug. 7, 2019).

¹⁸⁴ See Duportail, *supra* note 172 (noting that Tinder could see which men she ghosted).

¹⁸⁵ *Id.*

¹⁸⁶ Unless, of course, someone elects to post the screenshots online. See Rossalyn Warren, *42 of the Best, Worst, and Weirdest Messages Ever Sent on Tinder*, BUZZFEED (June 19, 2014, 5:56 AM), <https://www.buzzfeed.com/rossalynwarren/best-worst-and-weirdest-messages-tinder> (providing examples of Tinder screenshots).

¹⁸⁷ See David Kushner, *Scammers and Spammers: Inside Online Dating's Sex Bot Con Job*, ROLLING STONE (Feb. 1, 2016, 3:53 PM), <https://www.rollingstone.com/culture/culture-news/scammers-and-spammers-inside-online-datings-sex-bot-con-job-189657> (warning about the risk of fake profiles on dating sites).

¹⁸⁸ See Ally Foster, *The Terrifying Tinder Scam Catching Out Countless Australians*, NEWS.COM.AU (Apr. 2, 2018, 8:58 AM), <https://www.news.com.au/lifestyle/relationships/dating/the-terrifying-tinder-scam-that-countless-australians-are-being-caught-out-by/news-story/81db374b44be3f554a78063cb172d41c> (detailing how blackmailers on Tinder often extort users by threatening to post sexual photos or other intimate information online).

¹⁸⁹ Cross Coburn, a nineteen-year-old gay man, was a council member in a small Texas town. He had shared suggestive photos with another user. The photos were then shared

Second, apps may share data to other companies within the apps' corporate families. Tinder shares users' data with the rest of the Match group,¹⁹⁰ and Grindr may share data with its parent or sister companies.¹⁹¹

Finally, the app can share data to third parties. This includes advertising partners, data storage facilities, and companies who perform tech or other support services to the dating app firm.¹⁹² As this seems uncontroversial at first glance, an illustration proves useful. Grindr collects information about the HIV status of its users.¹⁹³ In 2018, news broke that Grindr shared users' HIV status with third parties, namely outside software vendors.¹⁹⁴ The HIV status was sent alongside GPS data, phone number, and email.¹⁹⁵ The identifying information permitted third parties to identify specific users' HIV status.¹⁹⁶ The firm's initial response was to remind users that information in public profiles will become public.¹⁹⁷ The outrage eventually led to a policy change.¹⁹⁸

3. *Data Security Policies*

Dating app firms collect wide arrays of intimate details, and they reserve the right to share this information with certain specific third parties. But even more concerning is that the security provided to

with the Mayor, the City Council, and the local news. See Tim Fitzsimons, *Catfished in the Bayou? Gay Councilman, 19, Ousted After Nude Photos Leaked*, NBC NEWS (Nov. 19, 2018, 6:29 PM), <https://www.nbcnews.com/feature/nbc-out/catfished-bayou-gay-councilman-19-ousted-after-nude-photos-leaked-n938211>.

¹⁹⁰ See *Our Commitment to You*, *supra* note 173 (noting that Tinder reserves the right to share users' data with their entire corporate family).

¹⁹¹ See *Grindr Privacy and Cookie Policy*, *supra* note 175. This is especially concerning for many users given that the app was purchased by a Chinese firm in early 2018. Intelligence officials worry that the sale "allows the app and its user information to become an asset of Chinese security services." Ariel Sobel, *Is the Chinese Government Spying on Your Grindr Profile?*, ADVOCATE (Jan. 17, 2018, 5:44 PM), <https://www.advocate.com/technology/2018/1/17/chinese-government-spying-your-grindr-profile>.

¹⁹² See, e.g., *Our Commitment to You*, *supra* note 173.

¹⁹³ See *Grindr Privacy and Cookie Policy*, *supra* note 175.

¹⁹⁴ See Brian Moylan, *Grindr Was a Safe Space for Gay Men. Its HIV Status Leak Betrayed Us*, GUARDIAN (Apr. 4, 2018, 7:50 PM), <https://www.theguardian.com/commentisfree/2018/apr/04/grindr-gay-men-hiv-status-leak-app> (describing the Grindr leak).

¹⁹⁵ See Azeen Ghorayshi & Sri Ray, *Grindr Is Letting Other Companies See User HIV Status and Location Data*, BUZZFEEDNEWS (Apr. 2, 2018, 11:45 AM), <https://www.buzzfeednews.com/article/azeenghorayshi/grindr-hiv-status-privacy> (describing what information was visible in the Grindr leak).

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ Heather Kelly, *Grindr to Stop Sharing HIV Status of Users with Outside Companies*, CNN (Apr. 2, 2018, 9:11 PM), <https://money.cnn.com/2018/04/02/technology/grindr-hiv-data/index.html>.

dating apps may be entirely insufficient. Tinder's privacy policy frankly states that users "should not expect [that their] personal information will always remain secure."¹⁹⁹ Bumble's policy similarly echoes the inherent insecurity of users' intimate information: "[N]o website . . . is . . . completely . . . secure and even we cannot guarantee that unauthorized access, hacking, data loss or other breaches will never occur"²⁰⁰

At least they are honest: The information will not always remain secure. Breaches in the dating app market are worryingly common. Take OkCupid, for example. In 2016, researchers publicly released information concerning 70,000 OkCupid users.²⁰¹ The information included usernames, age, gender, location, relationship preferences, and answers to thousands of profiling questions.²⁰² Profiling questions can be humorous, but many are deeply personal and sexual in nature. Examples of OkCupid questions include: "Would you ever consider cutting a partner (who asked for it) in sexual play?" "Have you ever gone on a rampant sex spree while depressed?" "While in the middle of the best lovemaking of your life, if your lover asked you to squeal like a dolphin, would you?"²⁰³ Answers to these types of questions were released—with identifying information—in the leak.

But more can be at stake than answers to these questions if dating apps do not provide sufficient security for dating app information. Users' messages and even intimate photos shared on the app can be susceptible to breach.²⁰⁴

¹⁹⁹ *Our Commitment to You*, *supra* note 173.

²⁰⁰ *Privacy Policy*, *supra* note 174.

²⁰¹ See Michael Zimmer, Opinion, *OkCupid Study Reveals the Perils of Big-Data Science*, WIRED (May 14, 2016, 7:00 AM), <https://www.wired.com/2016/05/okcupid-study-reveals-perils-big-data-science> (describing how researchers gained access to dating app users' profiles).

²⁰² *Id.*

²⁰³ Brian Donovan, *A Tour of the Sex Questions on OKCupid*, THOUGHT CATALOG (Sept. 3, 2012), <https://thoughtcatalog.com/brian-donovan/2012/09/a-tour-of-the-sex-questions-on-okcupid>.

²⁰⁴ On February 6, 2019, it became public that Jack'd—a small dating app for queer men—was showing users' intimate pictures to strangers. Jack'd, like some other apps, permitted users to have "private" (read: X-rated) photos and videos. Users could unlock these photos for users they were interested in. "[A]nyone with a web browser who knows where to look can access any Jack'd user's photos, be they private or public—all without authentication or even the need to sign in the app." Lisa Vaas, *Jack'd Dating App Is Showing Users' Intimate Pics to Strangers*, NAKED SECURITY (Feb. 6, 2019), <https://nakedsecurity.sophos.com/2019/02/06/jackd-dating-app-is-showing-users-intimate-pics-to-strangers>.

B. Competition on Data Privacy

In the previous Section, I outlined how dating app firms' data collection and security policies raise privacy concerns. But one could argue that data privacy, while concerning, exists in a separate sphere from antitrust policy. That is, one could argue that competition on data privacy grounds is facially implausible either because consumers do not care about data privacy or because consumers are otherwise incapable of assessing the security provided to data. In this Section, I argue that dating app firms are capable of competing on data privacy grounds. To be clear, I do not assert that competition should supplant regulation in the data privacy sector, but rather that competition can complement regulatory goals.

First, consumers do care about privacy in the dating app context. Of course, most data breaches result in minimal real-life consequences. “[W]hile every hack produces anguished headlines and hand-wringing, the impact of the data breaches on average people is small. . . . We glance at the headlines, change our passwords, and await the next minor inconvenience.”²⁰⁵ But data breaches in the dating app context—whether through a security bug releasing access to users' private photos or through inadequate monitoring of spam accounts—impact users' day-to-day lives. The Ashley Madison leak provides a particularly dire example. In 2015, Ashley Madison, a site to connect users seeking an extramarital affair, was breached.²⁰⁶ Due to the more unsavory nature of the site, the breach threatened not only marriages but also jobs—particularly in the military, in which adultery is a crime.²⁰⁷ If Ashley Madison seems particularly dramatic, the Grindr HIV leak reveals a more typical response to a dating app breach. Commentators noted that Grindr, the pioneer of dating apps and dominant dating app for queer men, began to fall out of favor after the breach became public.²⁰⁸ These examples—coupled with the natural intuition about the types of data collected by dating app firms—

²⁰⁵ Casey Newton, *The Mind-Bending Messiness of the Ashley Madison Data Dump*, VERGE (Aug. 19, 2015, 2:41 PM), <https://www.theverge.com/2015/8/19/9178855/ashley-madison-data-breach-implications>. Although consumers may be less attuned to data breaches in many industries, the Ashley Madison leak revealed that breaches are more salient if personal or sexual relationships are involved. “When Target was hacked, few would have cared if it resulted in their purchase history being made searchable. Looking through the Ashley Madison data will be . . . tempting” *Id.*

²⁰⁶ *Id.*

²⁰⁷ *Id.*

²⁰⁸ See Jon Shadel, *Grindr Was the First Big Dating App for Gay Men. Now It's Falling Out of Favor*, WASH. POST (Dec. 6, 2018), <https://www.washingtonpost.com/lifestyle/2018/12/06/grindr-was-first-big-dating-app-gay-men-now-its-falling-out-favor> (giving anecdotes of users leaving Grindr in response to various scandals, including the HIV leak).

provide evidence that consumer awareness and interest in dating app security are more salient than security in other sectors.

Second, the argument that apps cannot compete on data privacy because consumers do not understand data security is, at best, illusory. If firms were unwilling or unable to compete on data privacy, security policies would not vary significantly from industry to industry. But, as Professor Florencia Marotta-Wurgler recently demonstrated, “privacy policy content appears to be shaped at least [partly] by market forces”²⁰⁹ This makes intuitive sense. Consumers’ understanding has never been the baseline requirement for competition. Computer companies compete on the speed of processors, and smartphones compete on camera quality. Detergents advertise their eco-friendliness, credit cards (while regulated) still compete on interest terms, and car companies will claim to have the most crashworthy vehicles. Most consumers could not assess those claims on their own. Rather, competition is based on the ability of consumers to obtain information. This can include third-party firms ranking apps based on their privacy, firms advertising their own security measures, and competitors exposing flaws through their countervailing advertising campaigns. Further, apps will compete on security grounds out of fear that their security bugs will be discovered by independent analysts, as Grindr’s were. Finally, the government can create ranking systems for data privacy, as it has for other industry metrics like energy efficiency.²¹⁰

Having argued that dating app firms will at least plausibly compete on privacy terms, I turn to practical examples of how firms could compete. Firms could compete on their ability to weed out bot or catfish accounts.²¹¹ This includes competing on the basis of responding to consumer complaints about these accounts.²¹² A recent case involving Grindr illustrates how poor customer service in this industry can be.²¹³ In October 2016, Matthew Herrick’s ex-boyfriend began using Herrick’s image to create fake Grindr profiles that “describe[d]

²⁰⁹ Florencia Marotta-Wurgler, *Self-Regulation and Competition in Privacy Policies*, 45 J. LEGAL STUD. S13, S13 (2016) (comparing various privacy policies and finding that privacy policies respond to market needs, such as adult sites giving clear explanations and cloud-computing sites prioritizing data security).

²¹⁰ See *About ENERGY Star*, ENERGY STAR, <https://www.energystar.gov/about> (last visited June 1, 2019) (“ENERGY STAR® is the government-backed symbol for energy efficiency, providing simple, credible, and unbiased information that consumers and businesses rely on to make well-informed decisions.”).

²¹¹ See Kushner, *supra* note 187 (describing the harm fake accounts cause to users).

²¹² See Shadel, *supra* note 208 (noting that one user contacted Grindr support more than fifty times to report a fake account).

²¹³ *Herrick v. Grindr, LLC*, 306 F. Supp. 3d 579 (S.D.N.Y. 2018), *aff’d*, 765 F. App’x 586 (2d Cir. 2019).

Herrick as being interested in fetishistic sex, bondage, role playing, and rape fantasies.”²¹⁴ The ex-boyfriend then used Grindr’s direct messaging system to “encourage potential suitors to go to Herrick’s home or workplace for sex.”²¹⁵ Herrick alleged that approximately 1100 people responded to the fake profiles from October 2016 to March 2017,²¹⁶ and though he reported this to Grindr around 100 times, Grindr never responded except with an “automated, form response.”²¹⁷ A responsive customer service system would have ameliorated, if not prevented, the harassment that arose from malicious use of the app. However, absent competition, a dating app firm has limited incentives to invest in the quality of customer service provided to consumers on the app.

Similarly, firms could invest in and innovate in dynamic security software. A dating app could reduce the amount of data it sells to third parties. It could allow every user to request their entire data portfolio, as the EU requires. This could, perhaps, function as a “most favored nation” clause—a dating app could guarantee EU data protections to all consumers, even those outside the EU,²¹⁸ as opposed to explicitly disclaiming the applicability of foreign laws.²¹⁹ A firm could permit users to automatically purge text or picture messages that have been stored for longer than a specific time frame. Dating apps could offer “bounties” to hackers willing to expose flaws in their networks.²²⁰

Those examples represent endogenous measures firms can take in order to compete on the basis of privacy, but there is also an exogenous privacy benefit of increased dating app competition. The more data a firm has, the more attractive it is to hackers. Think of this like a honey pot. If Match controls all significant dating apps and shares the

²¹⁴ *Id.* at 584.

²¹⁵ *Id.*

²¹⁶ *Id.* at 585.

²¹⁷ *Id.*

²¹⁸ See Matt Burgess, *What is GDPR? The Summary Guide to GDPR Compliance in the UK*, WIRED (Jan. 21, 2019), <https://www.wired.co.uk/article/what-is-gdpr-uk-eu-legislation-compliance-summary-fines-2018> (summarizing the EU’s data protection policies).

²¹⁹ For example, Bumble’s privacy policies state: “If you live in a country with data protection laws, the storage of your personal data may not provide you with the same protections as you enjoy in your country of residence.” *Privacy Policy*, *supra* note 174. Grindr’s privacy policy similarly states: “Your Personal Data may be processed in . . . countries . . . where laws regarding Personal Data may be less stringent Therefore . . . you might be left without a legal remedy in the event of a privacy breach.” *Grindr Privacy and Cookie Policy*, *supra* note 175.

²²⁰ See Steve Johnson, *Silicon Valley Companies Pay Hackers ‘Bounties’ to Find Flaws Before Crooks Do*, GOV. TECH. (Dec. 11, 2014), <http://www.govtech.com/security/Silicon-Valley-Companies-Pay-Hackers-Bounties-to-Find-Flaws-Before-Crooks-Do.html> (describing how firms can pay bounties to encourage hackers to expose security flaws).

data among all apps in the corporate family, the company becomes a highly profitable target. In this case, one breach could be catastrophic. A competitive industry, on the other hand, serves as a constructive foil. If consumer data is split between three or more firms, each firm is less of a target for hackers. And indeed, even if a firm is hacked, the breach would cause less social harm.

CONCLUSION

The antitrust authorities have largely abdicated their role to scrutinize mergers in zero-priced industries. This reticence has, in effect, immunized much of the digital economy from meaningful antitrust intervention, and as a result, firms have been broadly permitted to acquire their competitors with no oversight from the Agencies.

Consumers will pay the price for this increased concentration. The dating app market is a particularly apt example. The Agencies have permitted a dominant firm to acquire twenty-five of its rivals in the past decade alone, and, in turn, the dominant firm can leverage its power over people's love lives to hike the price of its premium service. It can leverage its power over the quality of the app to pressure more consumers to pay for the premium model. And it can leverage its control over the data on these apps to profit off of users' intimate information while providing minimal privacy protections.