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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

MAXIMILIAN KLEIN, et al., on behalf of themselves and all others similarly situated,

Plaintiffs,

v.

META PLATFORMS, INC.,

Defendant.

Case No. 20-cv-08570-JD

The Hon. James Donato

FIRST AMENDED CONSOLIDATED ADVERTISER CLASS ACTION COMPLAINT

DEMAND FOR JURY TRIAL

CLASS ACTION

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INTRODUCTION

1. This Complaint is brought on behalf of people and companies—including each of the named Plaintiffs—who bought advertising from Defendant Meta Platforms, Inc.[1] ("Facebook") at anticompetitively inflated prices. Over the course of the past decade, Facebook devised, executed, and reaped the benefits of a scheme to unlawfully monopolize the market for social advertising. As a direct result, Facebook was able to (and in fact, did) charge supracompetitive prices for social advertisements to thousands of people and businesses, including Plaintiffs Affilious, Inc., Jessyca Frederick, Mark Young, Joshua Jeon, 406 Property Services, PLLC, Mark Berney, and Katherine Looper.

2. Facebook acquired the power to raise prices through the anticompetitive scheme described below and did so year after year with no competitive check.

* * *

3. By the end of 2010, Facebook had emerged the victor among social networks and had begun monetizing its product through targeted advertising. Facebook had obtained a monopoly in a form of online advertising that was distinct from others—social advertising. This form of advertising relied on a particular form of data, called social data, to power machine learning and AI models used for advertising and content targeting.

4. Facebook had acquired a critical mass of social data and targeting infrastructure, giving rise to a Data Targeting Barrier to Entry ("DTBE")—a network-driven barrier to entry that protected Facebook's monopoly share of the Social Advertising Market.

5. Facebook's dominance was threatened in 2012, and to fend off this threat Facebook's CEO Mark Zuckerberg and his senior lieutenants planned and executed a scheme between 2012 and 2015 that leveraged Facebook's developer Platform to extract social data and advertising revenue from third-party apps, some of which posed a competitive threat to Facebook. During this period, Facebook overtly destroyed its actual and potential competition, and acquired two then-nascent threats to its business, Instagram and WhatsApp.

[1] Originally-named Defendant Facebook, Inc. changed its name to Meta Platforms, Inc., during the pendency of this case.

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6. By April 2015, Facebook had expelled third-party apps from its Platform, including by purporting to deprecate core functionality such as traversing a user's Facebook friends, news feed, or Events functionality. Before this move, Facebook had been able to harvest social data from apps built on its Platform. Afterwards, however, Facebook faced a social data vacuum. Facebook entered into a series of data sharing and whitelist agreements to obtain vital data and advertising revenue, [redacted]

7. Yet Facebook was still in need of what it [redacted]

8. To obtain data from these companies, from 2016 to 2018 Facebook entered targeted sub-verticals, threatening ruinous competition and then [redacted]

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[redacted]

15. As the 2010s wore on, technological developments in header bidding and Google's acquisition and deployment of powerful machine learning tools across its growing data collection ecosystem threatened to erode Facebook's identity-based targeting advantage—and perhaps even superset the Social Advertising Market. Facebook responded by acquiring and expanding powerful cross-site and cross-device tracking tools, deploying its own machine learning tools outside its walled garden, and laying the groundwork to enter programmatic advertising and other Google-dominated online ad markets. By 2018, the two online advertising titans—each with its own long-running sphere of dominance—were headed for a direct clash.

16. Except that instead of competing, Facebook and Google actually cut an anticompetitive deal. Codenamed "Jedi Blue," this September 2018 agreement between Facebook and Google divided markets between the two companies and not only reinforced but bolstered Facebook's dominant position in the Social Advertising Market.

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17. Pursuant to the Jedi Blue agreement, Facebook dropped its support for header bidding, effectively ceding the programmatic and exchange-based ad markets to Google. At the same time, Google agreed to provide Facebook powerful tools to identify, target, and monetize Facebook's own users on the web and across third-party mobile applications, then give Facebook priority over 90% of advertisements to these users and twice the amount of time to bid on advertising to them.

18. The net effect was that Facebook remained the dominant—and only—source of granularly targeted advertising to its social-networking user base. In exchange, Facebook backed away from Google's advertising exchange business, including by forgoing the adoption of "header bidding."

19. As a result of the conduct set forth above, Facebook became and remained for nearly a decade the dominant (and in many respects, sole) source for highly valuable advertising that could precisely target networks of users in a social network. Facebook has used this market power to repeatedly raise advertising prices every year since it began its scheme.

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22. Over the course of nearly a decade, Facebook has faced no meaningful competitive check on social advertising prices—and it has extracted supracompetitive revenues from advertisers like Plaintiffs throughout this period.

23. Plaintiffs are advertisers on Facebook's advertising platform that were injured by paying supracompetitive prices for social advertising. The prices they paid would have been lower if Facebook had not unlawfully monopolized the Social Advertising Market and taken unlawful acts (including an express anticompetitive agreement with Google) to maintain that monopoly, as those prices would have been subject to competitive forces that would otherwise exist as a check on Facebook's market power and monopoly.

PARTIES

I. PLAINTIFFS

24. Plaintiff Affilious, Inc. ("Affilious") is a California corporation with its principal place of business in La Quinta, California. Affilious is an internet publisher firm that operates several websites, including WineClubReviews.net. In late 2016 and in August 2017, Affilious purchased advertising on Facebook's self-service advertising platform to promote WineClubReviews.net. Until no earlier than November 6, 2019, Affilious did not know, and could not reasonably have known, the truth about Facebook's anticompetitive conduct, including its purpose and intent to engage in anticompetitive conduct, nor could it have known that it had been injured by paying supracompetitive prices for advertising.

25. Plaintiff Jessyca Frederick is a citizen of the State of California. Frederick was the sole proprietor of ClubsAndGifts.com, a promotional website, and a founder and CEO of Affilious. At various times from April 4, 2009, through August 2017, Frederick purchased advertising on Facebook's self-service advertising platform to promote her businesses.

26. Plaintiff Mark Young is a citizen of the State of New York. Young is the sole proprietor of Dinkum Hair, a hair salon located in Buchanan, New York. Young d/b/a Dinkum Hair purchased advertising on Facebook's self-service advertising platform to promote the business between June 2017 and April 2019.

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27. Plaintiff Joshua Jeon is a citizen of the State of Texas. He is a pastor at Dwell Church in Austin, Texas. In April 2016, Jeon purchased advertising on Facebook's self-service advertising platform to promote Dwell Church. Jeon did not receive reimbursement from Dwell Church for the purchase.

28. Plaintiff 406 Property Services, PLLC ("406 Property Services") is a Montana professional limited liability company with its principal place of business in Whitefish, Montana. 406 Property Services is a real estate property services company. From approximately June 8, 2017, until approximately October 20, 2017, 406 Property Services purchased advertising on Facebook's self-service advertising platform to promote its business.

29. Plaintiff Mark Berney is a citizen of the State of Montana. From in or about 2016 into December 2018, Berney purchased advertising on Facebook's self-service advertising platform to promote his personal musical work.

30. Plaintiff Katherine Looper is a citizen of the State of California. From in or about 2013 through March 2020, Looper purchased advertising on Facebook's self-service advertising platform to promote free musical concerts at the Cadillac Hotel, a residential hotel for low-income persons in San Francisco operated by Looper's nonprofit organization, Reality House West.

31. Plaintiffs all paid prices for advertising that were higher than they would have been absent Facebook's anticompetitive conduct and unlawfully acquired and/or maintained monopoly. Facebook caused Plaintiffs to pay supracompetitive prices for advertising as a result of the market power it obtained and/or maintained as a result of the anticompetitive scheme described in this Complaint.

II. DEFENDANT

32. Defendant Meta Platforms, Inc., is a publicly traded company, incorporated in Delaware. Meta Platforms, Inc. was formerly known as Facebook, Inc., and changed its name to Meta Platforms, Inc. on October 28, 2021. Facebook's principal place of business and headquarters is located at 1601 Willow Road in Menlo Park, California.

33. Founded in 2004 by Mark Zuckerberg, Facebook is a social media company that provides online services to billions of users around the world. In exchange for providing services, Facebook

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collects user data, which it uses to create and sell targeted advertising services. Facebook's principal revenue is from targeted social media advertising that it provides to advertisers as a data broker.

34. Facebook also operates as a platform for third-party applications and hardware, and owns and operates several business divisions:

- *Facebook*. Facebook's core application, which bears the company's name, is, according to Facebook's filing with shareholders, designed to enable "people to connect, share, discover, and communicate with each other on mobile devices and personal computers." The Facebook core product contains a "News Feed" that displays an algorithmically ranked series of stories and advertisements individualized for each person.
- *Instagram*. Instagram is a photo-sharing application that allows users to share photos, videos, and messages on mobile devices. Instagram was acquired in April 2012, and at present, Facebook operates Instagram as a separate application from its core Facebook product.
- *Messenger*. Facebook's Messenger application is a multimedia messaging application, allowing messages that include photos and videos to be sent from person to person across platforms and devices.
- *WhatsApp*. WhatsApp is a secure messaging application used by individuals and businesses. WhatsApp was acquired by Facebook in 2014 for $21.8 billion, and at the time had approximately 450 million users worldwide.
- *Oculus*. Oculus is Facebook's virtual reality hardware line of business, which Facebook acquired in March 2014 for approximately $2 billion.

35. Facebook's revenue as of year-end 2019 was $70.70 billion (up 27% from the previous year), with net income from operations of $23.99 billion. Almost all of this revenue came from advertising, particularly mobile advertising. As of year-end 2019, Facebook maintained $54.86 billion in cash and cash-equivalent securities. Facebook employed 44,942 people around the world at the end of 2019 (up 26% from the previous year). Facebook's revenue as of year-end 2020 was $85.97 billion (a 22% increase from the previous year), with net income from operations of $32.67 billion. Again, almost

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all of that revenue came from mobile advertising. As of year-end 2020, Facebook maintained $61.95 billion in cash and cash-equivalent securities. Facebook employed 58,604 people around the world at the end of 2020 (up 30% from the previous year). In 2021, Facebook / Meta earned $117.93 billion in revenue, of which $114.93 billion came from advertising. The company's 2021 total income from operations was $46.753 billion. Disregarding Facebook / Meta's Reality Labs division (which operated at a substantial loss), Facebook / Meta's total income from operations in 2021 was $56.95 billion. Facebook / Meta's net income from operations (including Reality Labs) in 2021 was $39.37 billion

36. For the 2019 fiscal year, Facebook reported to investors that on average it had 1.66 billion daily active users of Facebook and Messenger ("DAUs") (up 9% from the previous year) and 2.50 billion monthly active users ("MAUs") (up 8% from the previous year). Facebook also reported that on average it had 2.26 billion daily active people ("DAP") who used any Facebook product (up 11% from the previous year) and 2.89 billion monthly active people ("MAP") (up 9% from the previous year). For the 2020 fiscal year, Facebook reported to investors that on average it had 1.84 billion DAUs (up 11% from the previous year) and 2.80 billion MAUs (up 12% from the previous year). Facebook also reported that on average it had 2.60 billion DAP who used any Facebook product (up 15% from the previous year). For the 2021 fiscal year, Facebook / Meta reported to investors that on average it had 1.91 billion DAUs, 2.89 billion MAUs, 2.78 billion DAP, and 3.53 billion MAP, across its family of products—an increase from 2020 in all four categories.

JURISDICTION AND VENUE

37. This action arises under Sections 1 and 2 of the Sherman Antitrust Act (15 U.S.C. §§ 1, 2) and Sections 4 and 16 of the Clayton Act (15 U.S.C. §§ 15, 26). The action seeks to recover treble damages, interest, costs of suit, equitable relief, and reasonable attorneys' fees for damages to Plaintiffs and members of the Classes resulting from Defendant's restraints of trade and monopolization of the Social Advertising Market described herein.

38. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 (federal question), 1332 (class action diversity jurisdiction), and 1337(a) (antitrust); and under 15 U.S.C. § 15 (antitrust).

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39. Venue is appropriate in this district under 15 U.S.C. § 15(a) (Clayton Act), 15 U.S.C. § 22 (nationwide venue for antitrust matters), and 28 U.S.C. § 1391(b) (general venue provision). Facebook transacts business within this district, and it transacts its affairs and carries out interstate trade and commerce, in substantial part, in this district.

40. The Court has personal jurisdiction over Facebook as it is subject to general jurisdiction in the State of California, where it maintains its headquarters and its principal place of business. The scheme, conspiracy, and monopolization alleged in this Complaint was targeted at individuals throughout the United States, causing injury to persons in the United States, including in this district.

INTRADISTRICT ASSIGNMENT

41. This action has been assigned to the Hon. James Donato of the San Francisco Division of this judicial district.

FACTS

I. FACEBOOK EMERGES AS THE DOMINANT SOCIAL NETWORK

A. The Last Social Network Standing

42. Facebook's meteoric rise since its founding in 2004 is well documented. The company—started in the dorm room of its CEO Mark Zuckerberg as "the facebook"—rose to prominence in the face of fierce competition from several social networks. Initially an exclusive service for elite universities throughout the United States, Facebook eventually expanded its network to encompass a general audience of users throughout the United States and worldwide.

43. Between 2004 and 2010, Facebook vanquished a number of rivals, emerging as the dominant social network in the United States.

44. Facebook's first chief competitor was MySpace. Founded in 2003 (a year before Facebook), MySpace targeted the same audience, provided largely the same services, and rapidly attracted an enormous number of users. By 2005, MySpace had 25 million active users, and was acquired by NewsCorp for $580 million. In 2006, MySpace registered 100 million users, passing Google as the most visited website in the United States.

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45. However, the next three years featured a steady downward spiral for MySpace—and countervailing growth by Facebook. In 2008, Facebook passed MySpace in worldwide active users and continued to grow, reaching 307 million active users across the globe by April 2009. In May 2009, Facebook passed MySpace in United States, 70.28 million to 70.26 million monthly active users.

46. MySpace never came close to Facebook again. By 2010, MySpace had mostly exited the market, leaving the business of social media for good. MySpace's CEO capitulated in November of 2010: "MySpace is not a social network anymore. It is now a social entertainment destination." In September 2010, MySpace reported that it had lost $126 million, and in June 2011, NewsCorp sold the company for $35 million—$545 million less than it had paid just six years earlier. By then, its user base had dwindled to just 3 million monthly visitors.

47. During the same time period, several other social networks also met their demise, including Google's Orkut, AOL's Bebo, and Friendster, which failed to scale rapidly enough to compete with MySpace and Facebook.

48. By 2009 and through 2010, Facebook emerged as the only peer-to-peer social media network to exist at scale, and no other network or company rivaled Facebook's massive user base. On March 2, 2010, *Adweek* reported that Facebook had booked revenues of up to $700 million in 2009 and was on track for $1.1 billion in 2010—almost all from advertising to its newly won users. Facebook had been roughly doubling its revenues every year up until that point—$150 million in 2007, $280-300 million in 2008, and $700 million in 2009.

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49. *Time* magazine heralded Zuckerberg as its 2010 Person of the Year.

50. *Time*'s cover story set out the stakes—the scope of the newly assembled social network was unprecedented and staggering:

> What just happened? In less than seven years, Zuckerberg wired together a twelfth of humanity into a single network, thereby creating a social entity almost twice as large as the U.S. If Facebook were a country it would be the third largest, behind only China and India. It started out as a lark, a diversion, but it has turned into something real, something that has changed the way human beings relate to one another on a species-wide scale. We are now running our social lives through a for-profit network that, on paper at least, has made Zuckerberg a billionaire six times over.

51. By 2010, Facebook was unrivaled and dominant in a way no company since Microsoft had been in post-personal-computer history. And it had done so by riding the currents of powerful network effects.

B. A New Market of Its Own Creation

52. By the beginning of the millennium's second decade, Facebook was the indisputable king of an entirely new market—a market built not on hardware or operating system dominance, but one built on a network of people, with its power and value directly derived from their engagement with that

network. The more data users fed into Facebook by communicating and interacting with each other, posting their pictures, and publishing their content, the more valuable the Facebook network became to third parties, who could advertise to Facebook's users by targeting them using the very information they provided to Facebook's network.

53. Data about what information users shared on their personal pages; the photos and profiles they viewed; their connections to others; what they shared with others; and even what they put in messages to other users all allowed targeted advertising on a scale that had never before existed. Unlike search advertising, Facebook's advertising platform allowed advertisers to target Facebook's user base by their attributes and behavior, not by a query entered into a search box. More importantly, unlike in search, user identity was not only discoverable, it was willingly provided by users—as was the identity of those users' closest friends and family members. These identities could be tracked and targeted throughout the Internet.

54. This social data created by Facebook's network of engaged users could be monetized in a number of ways. The data could be resold for targeted advertising and machine learning; Facebook's machine learning algorithms mined patterns in the data for advertisers, which allowed advertisers to reach precisely the right audience to convert into sales, user sign-ups, or the generation of sales leads. The data also could be sold by commercializing access—for example, by providing application developers, content generators, and advertisers with direct access to the information embedded in Facebook's network, such as the interconnection between users, user attributes, and user behavior. That data then could be mined by these third parties.

55. All the methods of monetizing social data were based on selling that data, but such data could be packaged, structured, or mined differently depending on the application for which it was being sold. For advertisers, Facebook's network presented advertisers and Facebook itself with entirely new social signals, such as relationships, events, friendships, and granular interests. Movies, music, and books were inherent parts of a user's profile. The amount of information in Facebook's network that could be mined as social data was unprecedented—and Facebook received all that data daily from its millions of users in the United States and worldwide.

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56. The data Facebook collected was uniquely social, derived from the engaged interactions and strong identity of Facebook's users. Twitter, a public-facing social network, loosely enforced identity and never required users to disclose granular details about themselves. Facebook stood alone in this regard, with a clear product emphasis on individuals and their connections to others. In 2010, Google, Yahoo, and the other major online advertising sources competed in an entirely different market—one based on search data. The data Facebook had at its disposal was not fungible with search data—it was actionable data about individual users, with their identities fully ascertainable.

57. By 2010, Facebook stood alone as the dominant player in the newly emergent market for social advertising—a market in which Facebook's own users provided Facebook with a constant stream of uniquely valuable information, which Facebook in turn monetized through the sale of advertising. Advertisers, finding no substitute from any other company, paid top dollar for Facebook's powerful targeting and actionable data, and some of those advertisers—wittingly or not—even fed crucial data about themselves, their products, and the efficacy of their targeting back to Facebook's network.

58. As Facebook itself explained to third-party developers in May 2007, Facebook's core value proposition and business model was (a) "providing access to a new kind of data—social data, which enables you to build applications that are relevant to users." With respect to that data, Facebook told developers: "You are on a level playing field with us. You can build robust apps, not just widgets. Complete integration into the Facebook site." By 2010, it was clear that Facebook's entire business was selling this new form of "social data" (and machine-learning-driven user targeting based on that data) and that it would do so by selling access to developers and selling advertisements targeting Facebook's network of engaged and active users.

C. The Data Targeting Barrier to Entry

59. As Facebook's dominant position emerged in 2010, powerful network effects and feedback loops took hold and solidified that position. Data provided by users, and user targeting based on that data, made Facebook's network more valuable, thereby attracting more users to the network. As a typical use case, a Facebook user would invite his closest friends and family, who would then invite

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and engage with other friends and family members who existed on the network. A familiar feedback loop—a virtuous circle—emerged, rapidly growing Facebook's user base.

60. The content generated by this user base, in turn, increased the value of the Facebook network. With each photograph, relationship status, check-in, or post by a Facebook user, the Facebook network became more valuable, not just as a means of communicating with directly connected acquaintances, but as a means of learning about more remotely connected ones.

61. As Samuel Lessin, then Facebook's VP of Product Management, explained to Mark Zuckerberg in an internal email on October 26, 2012, the data Facebook collects makes Facebook progressively more proficient at collecting and monetizing data:

> One of the things that puts us currently in a very defensible place is the relationship we have created between the people using Facebook all the time, and us having the information we need to make Facebook a better product. This is the fundamental insight in something like coefficient. ***We know more about what people want to see because people look at more stuff on our platform.*** In this respect, while there are other ways to get close, it feels viscerally correct that there is an ROS dynamic at play, ***the more people that use the system, the more information we have on how to make more people use the system***.

(emphasis added).

62. A barrier to entry emerged from this feedback loop. To compete with Facebook, a new entrant would have to rapidly replicate both the breadth and value of the Facebook network—a task a mere clone of that network could not accomplish. Indeed, to compete with Facebook, a competitor would not only have to build its own vast network but would have to draw active social engagement on a massive scale—which likely would require drawing a vast quantity of Facebook users away from that platform.

63. The costs to switch would be massive: an entrant-competitor would have to present an overall value proposition to users that not only exceeded that of Facebook's entrenched network, but did so handily. Moreover, to compete with Facebook's virtuous circle, the value delivered by an entrant-competitor platform would have to facilitate social data mining, including through machine learning and artificial intelligence, that would create even more value for users, developers, and advertisers. This barrier to entry is referred to throughout this Complaint as the Data Targeting Barrier to Entry ("DTBE").

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64. The DTBE protects Facebook's ability to control and increase prices in the Social Advertising Market without the pressures of price competition from existing competitors or new entrants. Because of its monopoly power in the Social Advertising Market and the DTBE, Facebook has been able

Figure 1: Retail Facebook CPM, Q4 2012 – Q4 2013

to consistently increase the price it charges for social advertising. And this is exactly what Facebook has done since it obtained its dominant position in 2010.

65. From 2011 to 2012, for example, Facebook massively increased the prices it charged for its advertisements—one of the primary sales channels for its social data. That year, costs per thousand impressions (CPM) on Facebook increased by 41%, with a 15% increase in the last quarter of 2011 alone. Cost per click (CPC), which is a measure of advertising costs paid on a by-click basis, rose 23% that same year. Facebook increased prices for social advertising as it also grew the number of advertisements it displayed on its site, indicating monopoly power in the Social Advertising Market.

66. Facebook maintained that power over its prices through 2013, with a 2.9x increase in CPMs year over year. The increase came as overall advertising revenues increased yet again—that year by a staggering 83% over the last.

67. These price increases would not be possible without the DTBE. If a rival network existed with comparable social data available for sale through advertising, Facebook's price increases would have been met with customer migration to the comparable rival. But Facebook had no such rival and was unfettered in its ability to increase prices, even while rapidly increasing its supply of data for sale through advertisement.

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68. Once Facebook had achieved dominance in the Social Advertising Market, its position only improved—and became more entrenched. The more advertising Facebook sold, and the more social data Facebook collected and packaged for sale, the more effective Facebook became at selling advertising, targeting users, and commercializing direct access to its users' social data (*e.g.*, through APIs). This, in turn, made entry by a new rival impossible or prohibitively costly, thereby allowing Facebook to increase prices and make additional investments that deepened the DTBE moat surrounding its business.

D. Google's Failed Entry into the Social Advertising Market

69. In 2010, Google became desperate to enter the Social Advertising Market. It had tried several times to do so before, but each foray was met with failure. Google's Orkut social network, which was launched days before Facebook, was quickly overtaken. Wave, Google's social communication platform, never achieved any traction with users. And Google's Buzz social network—built on the back of its highly successful Gmail product—imploded quickly in early 2010.

70. Google's next attempt to enter the market attacked Facebook's functionality head-on, which meant attempting to penetrate the powerful DTBE protecting Facebook's business. Google made a massive, unprecedented investment of resources into building a product with enough value to lure users away from Facebook's broad, highly engaged social network.

71. In 2010, Google's Vic Gundotra became the company's Chief Architect. Gundotra pitched a new social network to Larry Page, Google's cofounder, who returned as CEO of the company in 2011. Gundotra repeated an ominous refrain, "Facebook is going to kill us. Facebook is going to kill us," which frightened Page into action.

72. Page greenlit a new product, Google+. Initially, Google+ sought to leverage Google's YouTube product to build its social network, requiring a Google+ account for access to certain key features of YouTube. In the face of significant user resistance, Google backed away from that requirement. Nonetheless, Google attempted, through Google+, to build out a "social graph" that would leverage a common user identity across Google products, including YouTube and Gmail.

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73. In early 2011, Google began what insiders now refer to as "the 100-day march" toward launch of Google+. The product Google planned to deliver was, by any fair account, uncannily similar to what Facebook offered in terms of product features and functionality. By the summer of 2011, the planned features for Google+ included a continuous scroll product called the "stream" (a clone of Facebook's "feed" product); a companion feature called "sparks," which related the "stream" to users' individual interests; and a sharing app called "Circles," a purportedly improved way to share information with one's friends, family, contacts, and the public at large.

74. Unlike Google's past products, Google+ was not designed to organically grow and scale from small beginnings. From the outset, Google invested massive amounts of resources to bring a finished, full-scale social network to market. Calling the project "Emerald Sea," Google conscripted almost all of the company's products to help build Google+. Hundreds of engineers were involved in the effort, which remained a flagship project for Page, who had recently reassumed the Google CEO role. Google's Gundotra was quoted explaining that the product that would become Google+ was a transformation of Google itself: "We're transforming Google itself into a social destination at a level and scale that we've never attempted—orders of magnitude more investment, in terms of people, than any previous project."

75. The amount of resources Google brought to bear stood in stark contrast to its previous attempts at penetrating the Social Advertising Market. Google had dedicated barely a dozen staff members to its previous failed social network product, Buzz. At its peak, Google+ involved 1,000 employees from divisions across the country. Google, for example, ripped out its elaborate internal video conferencing system and forced employees to use the Google+ Hangouts video chat feature, which one internal employee described as "janky." Employee bonuses were tied to the success of Google+. And the entire project was confined to a level of secrecy never before seen at Google.

76. Google+ was released on June 28, 2011. The product included the "stream," the "Circles" app, the "Hangout" video chat and messaging product, and a photo sharing product. The resemblance to Facebook was striking. As one internal Google employee commented: "this looks just like Facebook. What was the big deal? It's just a social network." Another Google employee was quoted as saying, "All

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this fanfare and then we developed something that in the end was quite ordinary." One thing was indisputable: with the release of Google+, Google had challenged Facebook head-on by effectively cloning Facebook's product.

77. Because Google's user base was already massive, the Google+ product attracted millions of users shortly after launch. But though these users signed up for Google+, Google quickly found out they were not using the product. As one former Google employee explained:

> It was clear if you looked at the per user metrics, people weren't posting, weren't returning and weren't really engaging with the product. Six months in, there started to be a feeling that this isn't really working.

78. The problem for Google+ was the powerful network effect that reinforced the DTBE that protected Facebook. Google's clone of Facebook did not present enough new value to overcome massive network-based switching costs—the cost to Facebook users of shifting away from an existing networked product in which the users had actively invested their social data for years.

79. Paul Adams, a former Google+ user-experience team member, summed it up succinctly when asked why Google+ had failed:

> What people failed to understand was Facebook and network effects. . . . It's like you have this grungy night club and people are having a good time and you build something next door that's shiny and new, and technically better in some ways, but who wants to leave? People didn't need another version of Facebook.

80. By 2014, Google+ was declared a failure and Gundotra, its founder, eventually left Google. Within just a few years, Google—with all of its resources, developers, and existing user base—failed entirely to overcome the DTBE protecting Facebook. As long as Facebook controlled the data derived from an engaged and active user base, it could continue to keep that user base active and engaged.

81. The only way to disrupt this virtuous circle was with a rival product that provided significantly more or different value than Facebook, and that itself was propelled to scale by powerful network effects.

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II. A THREAT TO FACEBOOK'S MONOPOLY: THE RISE OF SMARTPHONES AND MOBILE APPS

A. The Mobile App Revolution

82. In 2009 and 2010, as Facebook emerged the undisputed winner of the social media wars, another new market had begun to take hold. The launch of the Apple iPhone in 2007 created a market for a new type of cellular phone: one with a user interface capable of robust Internet connectivity and messaging. No longer constrained by numeric keypads for texting—or clunky, permanent alphanumeric keyboards attached to phones, such as with the Treo or Sidekick cellular phones—the iPhone dynamically displayed a multi-touch keyboard and came equipped with a full-featured web browser that rendered complete web pages.

83. By the summer of 2008, Apple's newest iPhone, the iPhone 3G, was released with onboard GPS and other hardware upgrades. Accompanying the release of the new iPhone was a new store for third-party applications that would run natively on the iPhone: the Apple App Store, which opened for business on July 10, 2008, the day before the release of the iPhone 3G.

84. Developers who launched their third-party applications via the App Store reaped huge rewards. There were approximately 500 apps available at the App Store's initial launch. Games using the iPhones accelerometer became immediate successes, some quickly earning hundreds of thousands of dollars by selling downloads for just a few dollars each. Applications that exploited the new GPS functionality in the iPhone also quickly became popular. By September 2008, the Apple App Store had racked up 100 million downloads, and by 2009, it hit 1 billion. iPhone apps had become a new means to deliver scaled value to countless users. Google also launched what became its Play Store (initially known as Android Market) in 2008. It soon overtook Apple's App Store in terms of overall volume, with 82% growth. The mobile app revolution had begun.

85. Mobile apps rapidly proliferated, with huge opportunities for further growth—as the lion's share of cell phone activity by 2010 had become something other than making phone calls. For example, a 2010 Pew Research survey showed that taking pictures and sending text messages had become the most common uses for cellular phones among adults, with more than a third of adult cell phone users accessing

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the Internet, playing games, emailing, recording video, or playing music through their cell phones. At the same time, 29% of adult cell phone users had used a downloaded app.

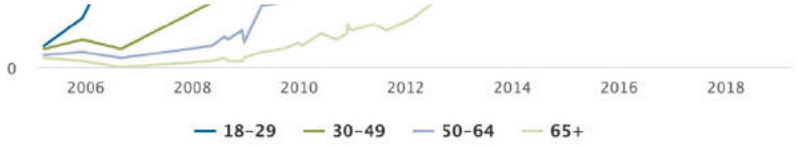
86. A 2010 Nielsen survey showed that games, news/weather, maps and navigation, and social networking were the most popular apps on cellular phones.

87. Notably, mobile apps resonated most strongly with the demographics that had recently adopted social media and were providing their data to Facebook in droves. App users among cell phone

% of adult cell phone users who do each of the following on their phone...

Take a picture	76%
Send or receive text messages	72
Access the internet	38
Play a game	34
Send or receive email	34
Record a video	34
Play music	33
Send or receive instant messages	30
Use an app	**29**

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=1,917 adult cell phone users.



Source: Surveys conducted 2005-2019.

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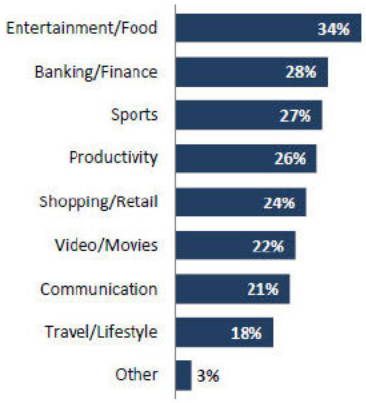

Source: The Nielsen App Playbook, December 2009. N=3,962 adults who have downloaded an app in the 30 days prior to the survey.

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owners were disproportionately younger, with 44% of app users in 2010 under the age of 20 and another 41% between the ages of 30 and 49. These were the same demographics that were rapidly adopting social media as part of their lives and providing Facebook with the social data that built and maintained the DTBE that protected its business.

88. Many of the mobile apps that were rapidly attracting users were doing so because they presented their own specialized value propositions. These apps had to be specialized because cellular phone screens were smaller, particularly in 2010, and mobile traffic was driven by specialty software, often designed for a single purpose. Users signed up for these apps with their e-mail addresses and personal information and interacted directly with the apps.

89. As *Wired* magazine described in 2010, a typical user moved from app to app, each with some specialized use:

> You wake up and check your email on your bedside iPad—that's one app. During breakfast you browse Facebook, Twitter, and the New York Times—three more apps. On the way to the office you listen to a podcast on your smartphone. Another app. At work, you scroll through RSS feeds in a reader and have Skype and IM conversations. More apps. At the end of the day, you come home, make dinner while listening to Pandora, play some games on Xbox Live, and watch a movie on Netflix's streaming service.

90. In 2010, Morgan Stanley projected that within five years, the number of users who accessed the Internet from mobile devices would surpass the number who accessed it from PCs. The Internet was at an inflection point—the World Wide Web was no longer the dominant way to access information. Users were obtaining their information from specialized walled gardens, and Facebook's own walled garden was one app away from being superseded.

91. The years leading up to 2010 saw the rise of streaming apps, such as Netflix and Pandora, and e-book readers, such as Kindle and iBooks. Apple's 2010 list of top-grossing iPhone apps included mobile games such as Angry Birds, Doodle Jump, Skee-Ball, Bejeweled 2 + Blitz, Fruit Ninja, Cut the Rope, All-in-1 GameBox, the Moron Test, Plants vs. Zombies, and Pocket God. Facebook's mobile app

topped the list of free downloads in the App Store, along with Words with Friends, Skype, and the Weather Channel App.

B. Facebook Recognizes the Looming Threat Presented by Mobile Applications

92. By 2011, Facebook realized that it had fallen behind. Facebook had just debuted its new "Timeline" product, a controversial modification of the Facebook feed that generated dynamic content for each user rather than a static series of posts visible to the user. Facebook had spent the last eight months prioritizing its desktop experience and its new Timeline product. But while it did so, mobile applications continued their meteoric rise.

93. Facebook's own mobile application was built on a technology called HTML5, which at the time was good for building web pages but not for building mobile apps native to iOS and Android smartphones. As a result, Facebook's mobile app was buggy, prone to crashes, and painfully slow. As Zuckerberg would lament years later about HTML5, "We took a bad bet."

94. Zuckerberg reflected in 2018 that Facebook had fallen behind when mobile apps emerged:

> One of my great regrets in how we've run the company so far is I feel like we didn't get to shape the way that mobile platforms developed as much as would be good, because they were developed contemporaneously with Facebook early on. I mean, iOS and Android, they came out around 2007, we were a really small company at that point—so that just wasn't a thing that we were working on.

95. As mobile apps rose, Facebook's desktop product acquired users at a slower pace. All of this occurred as Facebook was planning its initial public offering. Facebook knew that its position was eroding and that if mobile growth continued, its IPO debut would be in the midst of material changes to its business, undermining Facebook's financial and qualitative disclosures to public investors.

96. But there was no avoiding the issue. Facebook held its IPO on May 18, 2012. By the time Facebook released its first annual report, the trend was unmistakable—the transition to mobile devices from desktop web-based applications posed an existential threat to Facebook's business. In its 2012 Form 10-K, Facebook disclosed this risk to shareholders as one of the factors that affected its bottom line:

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> ***Growth in the use of Facebook through our mobile products as a substitute for use on personal computers may negatively affect our revenue and financial results.***
>
> We had 680 million mobile MAUs in December 2012. While most of our mobile users also access Facebook through personal computers, we anticipate that the rate of growth in mobile usage will exceed the growth in usage through personal computers for the foreseeable future and that the usage through personal computers may decline or continue to decline in certain markets, in part due to our focus on developing mobile products to encourage mobile usage of Facebook. For example, during the fourth quarter of 2012, the number of daily active users (DAUs) using personal computers declined modestly compared to the third quarter of 2012, including declines in key markets such as the United States, while mobile DAUs continued to increase. While we began showing ads in users' mobile News Feeds in early 2012, we have generated only a small portion of our revenue from the use of Facebook mobile products to date. In addition, we do not currently offer our Payments infrastructure to applications on mobile devices. If users increasingly access Facebook mobile products as a substitute for access through personal computers, and if we are unable to continue to grow mobile revenues, or if we incur excessive expenses in this effort, our financial performance and ability to grow revenue would be negatively affected.

C. The Facebook Platform

97. Although Facebook faced a looming threat from mobile applications, it maintained an important source of leverage: its social data. Facebook possessed (and continued to receive) vast quantities of information about its massive user base, including how each user was connected to others. This information was valuable to both new and existing mobile applications, which could leverage Facebook's social data to obtain new users and to build novel social features, functions, and apps.

98. Facebook referred to its network as its "Graph," coined after a mathematical construct that models connections between individual nodes. The Facebook Graph contained user "nodes," with connections and information exchanged among nodes as "edges." Facebook coined the term "Open Graph" to describe a set of tools developers could use to traverse Facebook's network of users, including the social data that resulted from user engagement.

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99. Importantly, Open Graph contained a set of application programming interfaces ("APIs") that allowed those creating their own social applications to query the Facebook network for information. As Facebook explained in its 2012 Form 10-K:

> ***Open Graph.*** Our underlying Platform is a set of APIs that developers can use to build apps and websites that enable users to share their activities with friends on Facebook. As Open Graph connected apps and websites become an important part of how users express themselves, activities such as the books people are reading, the movies people want to watch and the songs they are listening to are more prominently displayed throughout Facebook's Timeline and News Feed. This enables developer apps and websites to become a key part of the Facebook experience for users and can increase growth and engagement for developers.

100. Open Graph, along with other Facebook products, such as its NEKO advertising and Payments products, comprised Facebook's Platform. The Platform was vital to Facebook's business because it ensured that engagement continued on Facebook. Without the Platform, Facebook would be required to build applications that increased the value of its network itself—meaning that Facebook would have to try to predict what applications users wanted; design, code, and scale those applications across its user base and network; and bear the risk and resource drain of guessing wrong and making mistakes.

101. Facebook did not have the resources to do this, so it decided instead to allow third parties to build applications for the Platform. As Mark Zuckerberg observed in a February 2008 email to Facebook's VP Engineering for Platform Michael Vernal, a senior Zuckerberg lieutenant who was in part responsible for creating Open Graph:

> Platform is a key to our strategy because we believe that there will be a lot of different social applications . . . . And we believe we can't develop all of them ourselves. Therefore . . . . It's important for us to focus on it because the company that defines this social platform will be in the best position to offer the most good ways for people to communicate and succeed in the long term.

102. Put simply, Facebook could either speculate on new social applications by building them itself or it could provide a platform for others to do so. For years, Facebook opted to provide a platform until it was able to develop its own social applications.

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103. But Facebook also recognized that developers on its Platform could potentially pose a competitive threat. In its 2012 annual report, Facebook disclosed the following significant risk factor to its operations:

> In addition, Platform partners may use information shared by our users through the Facebook Platform in order to develop products or features that compete with us. . . . As a result, our competitors may acquire and engage users at the expense of the growth or engagement of our user base, which may negatively affect our business and financial results.

104. Thus, Facebook knew that competition could come from its own third-party application developers. But Facebook nevertheless actively sought developers to build applications on its Platform because of the potential to extract profits from the applications these developers built and the users they attracted to, and engaged on, Facebook's network.

105. As Facebook explained to its investors in 2012, maintaining a Platform on which developers could build applications meant more engagement and therefore greater ad revenues for Facebook:

> Engagement with our Platform developers' apps and websites can create value for Facebook in multiple ways: our Platform supports our advertising business because apps on Facebook create engagement that enables us to show ads; our Platform developers may purchase advertising on Facebook to drive traffic to their apps and websites; Platform developers use our Payment infrastructure to facilitate transactions with users on personal computers; Platform apps share content with Facebook that makes our products more engaging; and engagement with Platform apps and websites contributes to our understanding of people's interests and preferences, improving our ability to personalize content. We continue to invest in tools and APIs that enhance the ability of Platform developers to deliver products that are more social and personalized and better engage people on Facebook, on mobile devices and across the web.

106. Facebook's Platform was valuable to Facebook in several important ways.

107. First, the Platform meant that new applications would be built on Facebook's network, increasing the value of Facebook's network as the applications became more popular. The increased engagement with Facebook as a result of these new applications translated to better-targeted content and higher advertising revenues.

108. Second, Facebook would not need to spend significant resources to develop new applications or test new business models—third parties would do that instead. Facebook could merely wait for an application built for its Platform to gain widespread adoption, then either build a competing application or passively glean the benefits of that popular application's user engagement, including valuable new social data for Facebook and its network.

109. Third, access to Facebook's network was itself valuable to third-party developers, so Facebook could charge developers—most notably, through API access and advertising purchases—to access Facebook's Platform and the social data it collected from Facebook's massive number of engaged users.

D. The Profitable Open Graph Platform and Mobile Install Business

110. Facebook continued to struggle to catch up with the new onslaught of mobile applications, but it recognized that the new apps required aggressive user growth to be profitable. Among other things, Facebook's APIs allowed mobile app developers to query the friends of a person's friends, which allowed mobile applications to find other users who might be interested in using their apps.

111. Mobile apps also could use Facebook to communicate across Facebook's network, either directly with a user's friends or with others not directly connected with the user. A mobile payment application, for example, could enable two strangers to pay each other, even if they were not directly connected on Facebook—so long as both of them existed somewhere on Facebook's Platform. A user of a dating application, such as Tinder, could use Facebook's APIs to find a compatible date, either in the extended network of one's friends or beyond—anywhere on Facebook's Platform.

112. Facebook quickly realized it could monetize the value of its network through third-party mobile applications, and it moved aggressively to do so, beginning with games built to run on Facebook's Platform. Those games, many of which were social games that allowed users to play with and against each other, sought above all else new users to increase their adoption. Facebook's Vernal sought to obtain a beachhead with these applications, monetizing each additional game install that resulted from the use of Facebook's Platform or from Facebook's advertising product, NEKO.

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113. For example, Facebook included ads as "stories" on user timelines that indicated whether the user knew other users who were playing a particular game. Facebook then monetized such advertisements when the game obtained new users from them. As Vernal explained in a May 2012 e-mail:

> The biggest/most efficient market segment for advertising on mobile today is driving app installs. This is at least partly because it's the most measurable—if you know that you get $0.70 from every game you sell, then in theory you can afford to pay up to $0.69/install. This kind of measurability allows for maximal bidding.
>
> So, what we're trying to do is kickstart our sponsored stories business on mobile by focusing on one particular type of story (is-playing stories) and one market segment (games), make that work really well, and then expand from there.

114. Facebook thus leveraged its most valuable asset—the information it had about its users, their interests, and most importantly, their friends—to make money from the proliferation of mobile games.

115. Games like Farmville, a mobile application that allowed players to create their own simulated farms, quickly took off because of Facebook's Platform. Facebook increasingly recognized that it could obtain engagement from users through the game itself.

116. This strategy led to a broader one, in which Facebook drove app installs by allowing developers to advertise to its user base and traverse Facebook's social network through the Facebook APIs. Facebook collected a fee for each app install that resulted from its network. Vernal outlined the plan in detail:

> **Roughly, the plan:**
>
> 1/ Create new iOS + Android SDKs, because the current ones are terrible. Ship Thunderhill so we get even broader adoption of our stuff.
>
> 2/ Wire them up to make sure we know when you're playing a game (so we can generate the same kind of is-playing stories we can on canvas).
>
> 3/ Generate a bunch of effective, organic distribution for these games via our existing channels (news feed, net ego on both desktop + mobile). Ship

> send-to-mobile, which allows us to leverage our desktop audience to drive mobile app traffic.
>
> 4/ Create an even better app store than the native app stores (our app center) and make a lot of noise about it, so developers know that they should be thinking about us to get traffic to their mobile apps.
>
> 5/ Introduce a paid offering, probably cost-per-install (CPI) based, where you can pay us to get installs from your mobile app. Primary channels for this paid distribution are News Feed and App Center (on desktop + mobile) as well as RHC on desktop.

117. The strategy was clear, not just for gaming, but for mobile apps. Facebook would make money by allowing app developers to leverage its user base. Facebook would advertise social games to its users by plumbing their social data—including data about when they played games and which of their friends played them—and in exchange, Facebook would receive some amount of money per install, which would be the app developer's cost-per-install (CPI). The same plan would work for mobile applications generally.

118. By the end of 2011 and the beginning of 2012, Facebook began discussing other ways to monetize its Platform, including its Open Graph APIs. One way was to sell API access based on usage. Zuckerberg and top executives at Facebook extensively debated a tiered approach to API access. Facebook deliberated over a pricing model for API access, and internally decided that it would be possible to sell API access to third-party developers. Facebook also decided that it could bundle API access with the ability to advertise on Facebook. However, as explained below, Facebook gave up the profits it could glean from API access for the chance to dominate the Social Advertising Market entirely, excluding competitors (both actual and potential) and leveraging network effects to achieve and maintain monopoly power.

III. FACEBOOK WEAPONIZES ITS PLATFORM TO DESTROY COMPETITION

A. Facebook Makes Plans to Remove Vital Platform Functionality and Refuses to Sell Social Data to Competing Application Developers

119. Although Facebook had made significant amounts of revenue and profit selling access to its social data through its APIs and its NEKO advertising system and had planned to expand that business, it chose not to, sacrificing those significant profits.

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120. By the end of 2011 and the beginning of 2012, Zuckerberg along with Facebook's Vice President of Growth, Javier Olivan, its VP of Product Management, Samuel Lessin, and Michael Vernal internally debated a plan to prevent third-party developers from building their own competing social networks that could be capable of generating engagement and social data independent of Facebook's Platform.

121. Emerging mobile applications such as Line, WeChat, and Instagram were creating their own vast user bases with identity and login features separate from the Facebook Platform. Their increasing ubiquity posed an existential threat to Facebook's core business, which relied heavily on engagement from its user base. These applications provided quintessentially social applications, such as image sharing, messaging, and payments—a direct threat to Facebook's own applications, including Facebook's own fledgling Messenger application.

122. Mobile applications were rapidly eating away at Facebook's dominance, which relied heavily on its web-based desktop product. Zuckerberg openly acknowledged that its desktop applications were not the future and that native phone apps would dominate the mobile web in the future.

123. Zuckerberg therefore sought to consolidate core applications into its own centralized Facebook application, noting in a March 2012 Q&A with employees that Facebook was "building towards social Facebook versions where you can use the individual app or the Facebook version." That is, users could "replace whole parts of your phone with these Facebook apps and [they] will be a whole package for people."

124. Beginning in the fall of 2011 and well into 2012, Mark Zuckerberg and his chief lieutenants, Lessin and Vernal, planned to address the looming mobile applications threat. Their solution was a scheme to disrupt the massive growth of mobile applications by attracting third-party developers to build for Facebook's Platform and then remove their access to the APIs that were most central to their applications. They would accomplish this by leveraging Facebook's "Friends" and "Timeline" APIs, as well as other vital APIs, including those relating to messaging.

125. The Friends APIs let third-party developers traverse the Facebook Graph, searching through a user's friends as well as the friends of their friends. Zuckerberg and his executives proposed

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modifying the APIs to deny third-party developers access to information about a user's friends (and the friends of their friends) unless that developer's application was already installed by a user's friends to begin with. This ensured that new applications could not obtain new users or use Facebook's social data to increase the value of their application.

126. Facebook also foreclosed developers from continuing to extract information about a user's friends from their timeline or news feed. Thus, third-party applications that relied on the stream of information that flowed through a user's news feed, such as a post about a friend of the user getting engaged or sharing a news article, would be abruptly left with none of the social data they needed to function.

[redacted]

128. Removing access to these APIs halted the growth of tens of thousands of third-party applications that relied on these essential APIs and were, in Facebook's view, threatening Facebook's dominance by eroding the DTBE that protected Facebook's business.

129. Facebook's plan prevented any competitive third-party application from buying social data from Facebook, either through its Platform APIs or through its advertising Platform. As Vernal explained to Lessin in August of 2012, Facebook would "not allow things which are at all competitive to 'buy' this data from us."

130. Facebook thus refused to sell its social data to any competitive third-party developer, sacrificing significant short-term profits in exchange for a competitive advantage in the Social Advertising Market. If not for the prospect of driving these competitors out of the markets in which Facebook competed, the decision to refuse to sell social data to third-party developers made no economic, technical, or business sense.

131. Third-party developers with successful applications increased the value of Facebook's overall network by increasing engagement and generating the very social data Facebook sold through its targeted advertising channels, including to developers. As Zuckerberg had observed years earlier,

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Facebook itself could not broadly develop new third-party apps or anticipate what apps would be successful, so it relied on third parties to do so. Refusing API and social data access to third parties meant that they could not develop the applications that were vital to Facebook's growth, engagement, and advertising revenue. Facebook decided to deliberately sacrifice the value its third-party developers provided to secure dominance in the Social Advertising Market.

B. Facebook's Social Data Heist

132. In May 2012, Zuckerberg decided to use the threat of blacklisting from its Platform to extract precious social data from some of Facebook's competitors. He instructed his executives to quietly require "reciprocity" from major competitors that used Facebook's Platform. The reciprocity Zuckerberg demanded was the very lifeblood of these competitors' businesses—the social data harvested from user engagement on their competing networks.

133. By the middle of 2012, Facebook began to block some of its competitors from using its Platform and thereby obtaining Facebook's social data. Facebook had already blocked Google, including its competing social network Google+, from access to Facebook's APIs and advertising platform. With respect to Twitter, Instagram, Pinterest, and Foursquare, Facebook would demand "reciprocity" or blacklist them. Reciprocity, of course, meant that these competing social networks would have to hand over their most valuable asset—their social data—to their rival Facebook.

134. If rivals did not comply with Zuckerberg's demands to hand over their social data to Facebook, Facebook would simply take it. In May 2012, Vernal directed his subordinates, Douglas Purdy (Director of Engineering for Platform) and Justin Osofsky (VP of Global Operations), to build "our own hacky scraper" and a "bunch of scrapers" to crawl rival sites like Twitter and Instagram and harvest their social data—with or without their consent. If Twitter or Instagram refused to agree to Zuckerberg's "reciprocity" proposition, Facebook would use the scrapers to obtain the data instead.

135. In August 2012, Facebook considered broadening its list of companies to shake down for social data—or to block entirely from Facebook's Platform. That month, Facebook's then VP of Business and Marketing Partnerships, David Fischer identified other potential product categories and competitive companies in each category to block:

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> I'd expect that a large part of the market for our network will come from current and potential competitors. Here's the list that Jud worked up of what we'd likely prohibit if we were to adopt a ban on "competitors" using a broad definition:
>
> - Social network apps (Google+, Twitter, Path, etc.)
> - Photo sharing apps (Picasa, Flickr, LiveShare, Shutterfly, etc.)
> - Messaging apps (WhatsApp, Viber, Imo, KakaoTalk, etc.)
> - Local apps (Google+ local, Google Offers, Yelp, yp, etc.)
> - Social search apps (HeyStaks, Wajam, etc.)
> - Platforms (Google Play, Amazon, etc.)

136. Facebook thus identified its direct, horizontal competitors for social data, including those competitors that had, or could create, rival social advertising platforms. These categories of competing applications, particularly on mobile platforms, threatened Facebook's business because they created social networks independent of Facebook, each capable of generating their own valuable social data. If Facebook lost control over these companies, it would lose access to the social data they generated, which meant Facebook's own product could not drive engagement and sell advertising. This was because Facebook's machine-learning algorithms—used to target users for advertising and content, including by granular demographics—required social data to function.

137. In August 2012, Facebook gave a presentation to its Board of Directors that included various revenue models to monetize its Platform, including its APIs. The Board understood that Facebook could monetize its Platform by charging per company, per application, per user, or per API call.

138. But Facebook opted to do none of those things. Instead, it decided to sacrifice those profits in the short term to obtain complete control over the growing mobile application and advertising markets, thereby maintaining and furthering its dominance of social data and the Social Advertising Market.

139. Facebook's plan was to instead block competitors from using its Platform, thereby preventing them from eroding the DTBE that protected Facebook's business. In the case of a select few companies with social data that Facebook needed to maintain and grow its own business, however, Facebook would coerce them into agreements to share their most valuable social data with Facebook. If

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they refused, Facebook would blacklist them and take it from them anyway with its own crawling software that would scrape their public-facing site for information.

140. In September 2012, Zuckerberg formalized his order to shut down the Friends and News Feed/Timeline APIs and to coerce rivals into providing their valuable data to Facebook on pain of blacklisting. On October 30, 2012, Vernal notified his subordinates of Zuckerberg's decision:

> We are going to dramatically reduce the data we expose via the Read API . . . . We are going to change friends.get to only return friends that are also using the app . . . . Since friends.get will only return other TOSed users' data [data from users that agreed to an application's terms of service], that means we no longer need the friends_* permissions. We are going to remove/whitelist access to the Stream APIs [the News Feed API]. We are going to limit the ability for competitive networks to use our platform without a formal deal in place . . . . We are going to require that all platform partners agree to data reciprocity.

141. This decision meant several things: (1) when a third-party application called the Friends APIs, it could not obtain information about a user's other friends unless those friends already had installed the application; (2) the News Feed APIs would no longer provide information about a user's connections; (3) access to those API could be "whitelisted" for third-party developers that were offered—and agreed to—data reciprocity; and (4) reciprocity would be required for any access to the APIs.

142. In November 2012, Osofsky, who was then head of Facebook's Platform, summarized the policy changes required by the decision:

> Policy changes: define competitive networks + require they have a deal with us, regardless of size. Maintain size-based thresholds for all other developers to force business deals. Require data reciprocity for user extended info to ensure we have richest identity.

143. Facebook knew that these changes would eliminate the "growth channel used by 23% of all Facebook apps" and that 89% of the top 1,000 iPhone apps relied on the full friends list API, with 75% of the top 1,000 iPhone apps relying on the Friends permissions APIs. Facebook determined that popular applications on its platform with millions of customers would break as a result of the decision, including FarmVille, ChefVille, CityVille, Skype, Spotify, Xobni, Texas Holdem, Yahoo, Trip Advisor, Microsoft's Birthday Reminders, Samsung's clients, Glassdoor and dozens of others.

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144. On November 19, 2012, Zuckerberg broadly announced his decision to block competitors or require full data reciprocity for continued access. Facebook's COO Sheryl Sandberg immediately ratified the decision, adding that "we are trying to maximize sharing on Facebook, not just sharing in the world," with the note that the distinction was a "critical one" and the "heart of why."

145. Facebook began preparing its 2013 plan for its mobile advertising business, which included the launch of a new version of its Platform, version 3.0. Platform 3.0 would (according to Facebook) facilitate Facebook's transition from its desktop advertising business to a mobile advertising business. A central element of the transition plan was the implementation of Zuckerberg's decision to remove the Friends and News Feed APIs.

146. Vernal explained Zuckerberg's decision to other Facebook employees in November 2012, noting that he believed the amount of data that Facebook required from competitors was "crazy":

> [A company must share] every piece of content by that user that can be seen by another user. What Mark is saying is he wants certain partners (I assume not all) to give us news feeds on behalf of their users, which is kind of crazy.

147. Facebook continued to formalize its plan to require the right to crawl the sites of its competitors as a condition of access to its Platform. In November 2012, Facebook's Group Product Manager, Rose Yao explained the scheme:

> We also reserve the right to crawl a partner website for the user's data. Partners cannot blacklist or block Facebook from crawling your site or using the API. If they do, Facebook reserves the right to block the partner from using our APIs . . . . The theory behind Action Importers was that we needed to balance the leverage. You can call our APIs and access our data, as long as we can call your APIs (if you have them) or crawl your web site (if not) and access your data. It's one thing to drag your heels, but if we're the ones doing the work then we force you to make a decision—either you allow us access to your data, or you block us. If you block us, then it's really easy/straightforward for us to decide to block you. What's changed? ***When we first started discussing this, we were talking about doing this only for top partners. I think a lot of folks interpreted this as just a negotiation tactic—we'd just threaten to do this if they didn't cooperate. What's changed between then and now is that this is now very clearly not a negotiation tactic—this is literally the strategy for the read-side platform.***

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(emphasis added).

148. Thus, what began as a negotiation strategy to extract social data from rivals became the foundation of Facebook's Platform strategy. For competitors that posed enough of a threat to create their own rival network, Facebook required them to hand over the only leverage they had—the social data they derived from their users' engagement.

149. For some rivals that directly competed, no amount of data would justify access to Facebook's Platform, and for nascent threats that relied on Facebook's platform that did not have any useful data to extract, Facebook's decision was to simply cut off their access to the Friends and News Feed APIs, killing their businesses almost immediately.

150. Vernal expressed concern about the strategy to Zuckerberg in November 2012, noting that he was skeptical that competitors such as Pinterest would allow Facebook to take their social data. If they, as well as others, did, Facebook would become a central exchange for data collected among competitors. That is, competitors would share the data to Facebook and Facebook would then share that data back to the competitors that participated in the scheme. ***Facebook would become a data-passthrough mechanism***.

151. In December 2012, despite recognizing that API access, particularly when bundled with Facebook's NEKO advertising platform, was profitable, Facebook decided not to charge for API access and began full implementation of Zuckerberg's decision.

152. Although Facebook had planned to announce its decision not to allow access to Friends data through its Friends and News Feed APIs in a public blog post, Zuckerberg vetoed that decision in December 2012. Instead, Zuckerberg decided to enforce the decision selectively and covertly after deliberately analyzing Facebook's competitors. Some competitors would be blocked entirely from the APIs, while some select few would be blocked only if they did not provide their own social data to Facebook.

C. Facebook Targets Its Competitors for Reciprocity or Denial of API Access

153. Beginning in January 2013, Facebook began an internal audit of all of the applications that relied on its Platform. It immediately identified competitors to shutdown entirely from accessing

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Facebook's APIs or advertising platform. Specifically, Zuckerberg ordered that WeChat, Kakao, and Line be restricted from using the Friends and News Feed APIs and even from advertising on Facebook's NEKO and other platforms.

154. Facebook's David Fischer balked at the decision, noting that blocking competitors even from the advertising platform was irrational and unworkable:

> I continue to believe we should allow ads from competitors for several reasons: We should be secure enough in the quality of our products to enable them to compete effectively in the open marketplace . . . . It looks weak to be so defensive. This will be a challenge to enforce. We have many competitors and the list will grow in time. How will we judge retailers and e-commerce sites as we grow Gifts, since they arguably are competitors too?

155. Fischer was right. The decision made no rational economic or business sense. The sole purpose of refusing to sell social data as part of the Facebook Platform or through advertising was to shut out competition and allow Facebook to dominate the Social Advertising Market. Aside from that anticompetitive purpose, the decision to refuse to sell social data or advertisements even at full price was so facially irrational that Facebook's own employees who may not have been fully privy to the anticompetitive scheme protested at the irrationality of the decision.

156. That same month Facebook's Osofsky pleaded with Vernal to make an announcement that would send a clear signal to developers, but Vernal responded that Zuckerberg had already rejected that approach. As Vernal explained, telling developers about the decision means bearing the "very real cost" of "changing the rules," including the "PR cost" of betraying developers that Facebook had induced to build for Facebook's APIs and Platform.

157. That same month, Facebook continued to implement Zuckerberg's decision to blacklist competitors. He ordered that Facebook competitor Vine be "shut down" from Facebook's API and Platform, including from advertising. Facebook had again sacrificed the profits it would glean from increased engagement and advertising revenue as a result of Vine's use of Facebook's Platform in exchange for the exclusion of Vine from the competitive landscape.

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158. Indeed, Facebook's mobile advertising platform was growing rapidly, and blocking large companies from using it made no economic sense other than to effectuate Zuckerberg's scheme to prevent rivals from competing with Facebook. In a January 20, 2013 email, Facebook's then-Director of Product Management and Platform Monetization team, Deborah Liu reported: "Neko grew another 50% this week! Hit a high of $725k Friday (see charge below). We are now 5% of total Ads revenue and 21% of mobile ads revenue."

159. Lessin responded to the news: "The neko growth is just freaking awesome. Completely exceeding my expectations re what is possible re ramping up paid products."

160. Liu was clear, however, that the increased revenues occurred notwithstanding the blacklisting of formerly large spenders, such as WeChat: "WeChat and other competitive networks are no longer advertising on Neko based on policy."

161. In February of 2013, Facebook shut down Yahoo!'s access to key APIs, resulting in direct negotiations between Yahoo!'s Marissa Mayer and Facebook's Sheryl Sandberg in order to restore Yahoo!'s access to the Facebook Platform.

162. In March 2013, Facebook's key Platform employees began to voice concern that the approach taken by Facebook of shutting down access and then coercing "data reciprocity" was problematic. They instead encouraged making an upfront announcement that the APIs would be unavailable and then negotiating a deal for access to Facebook's Platform. In an e-mail that month from Purdy to other Facebook employees and executives, he wrote:

> I have been thinking about the challenges around reciprocity and competitive enforcement (friends.get, etc.) and fact that ***it is all post facto***. The way we are structured today, you build an app on FB and then launch and then we may just shut you down, harming users and the developer. I wonder if we should move as quickly as possible to a model in product where all you get from platform is login (basic info) and sharing without approval. All other APIs are available in development, but have to be approved before the app launches to real users (basically all apps using friends.get have to have that capability approved). We are roughly on course to deliver this as part of unified review, save for the more granular approval for things like friends.get? What I love about this too is we could make our whitelists so much cleaner by making each capability an approval thing. Marie: I think makes your "deprecations" much easier. Thoughts?

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163. Although Facebook moved towards full deprecation of the APIs with the exception of those with whitelisting agreements, it continued its campaign of quietly shutting down competitors' access to the APIs and then asking them to make a reciprocity deal. Indeed, Facebook soon thereafter shut down three competing Amazon apps, resulting in Amazon protesting that the decision "will break 3 of our live integrations."

164. That same March in 2013, Facebook used API and Platform access as leverage to acquire rival Refresh.io. Facebook internally decided that it would threaten Refresh.io with denial of access to the APIs unless it sold its business to Facebook. That same form of leverage would be used to acquire other rivals—either they sold to Facebook or they saw their business ejected from Facebook's Platform.

165. In 2013, Facebook also began using mobile spyware company Onavo to secretly track application usage on customers' phones. Onavo, through deceptive terms of service, tracked app usage in real time, and Facebook used that data to target specific competitors. By April 2013, Olivan was using Onavo to track Snapchat, Pinterest, WhatsApp, Tumblr, Foursquare, Google, Path, vine, Kik, Voxer, MessageMe, Viber, GroupMe, Skype, Line, and Tango. One internal Olivan presentation contained detailed usage data for these applications from August 2012 to March 2013.

166. By July 2013, Onavo data was providing detailed intelligence to Facebook on 30 million Onavo users. Among all of the apps, the data showed the meteoric rise of WhatsApp, a direct competitor to Facebook's own fledgling product, Messenger.

167. Armed with detailed intelligence about its competitors—both on and off the Facebook Platform—Facebook ordered a detailed audit of Facebook applications that relied on the Friends and News Feed APIs.

168. Facebook's Director of Developer Platforms & Programs, Konstantinos Papamiltiadis, reported back that there were 40,000 apps using the APIs that were to be restricted, with 7% of them being photo or video sharing apps.

169. Facebook then began to categorize these third-party applications into three general categories: (1) developers that "may cause negative press" if their access to APIs were shut down; (2) applications that "provide strategic value"; and (3) applications that were "competitive" or "not useful to

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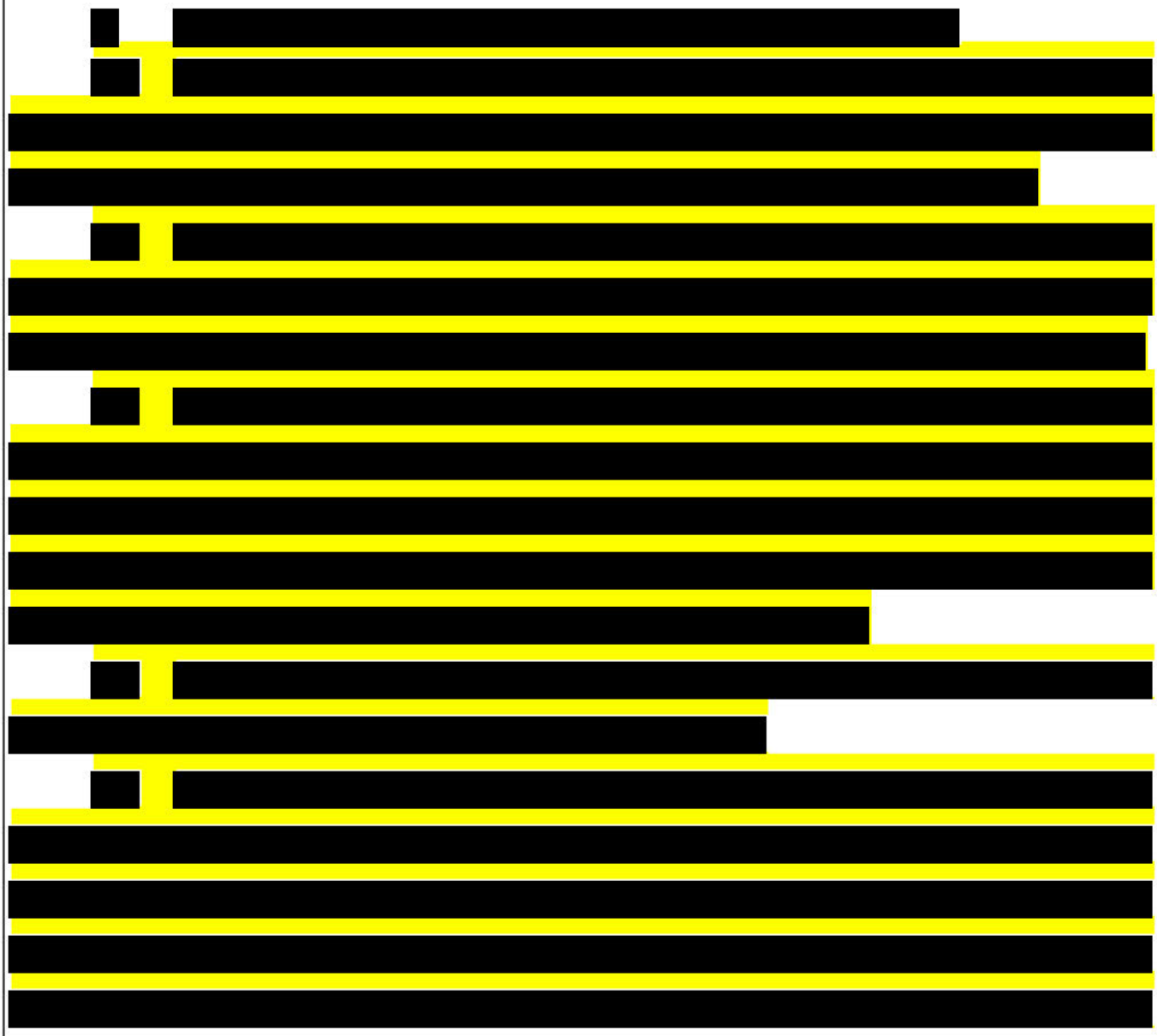
FB. Application developers that would experience "a Major Business Disruption/Kill" as a result of the restriction of API access received a "PR flag."

170. In response to the categorization, Lessin immediately ordered his subordinates to "shut down access to friends on lifestyle apps . . . because ***we are ultimately competitive with all of them***." (emphasis added).

171. As Facebook continued its analysis of the applications that relied on the Friends and News Feed APIs, it became clear that Facebook's plan would result in the deprecation of the "majority of the API surface"—namely, the APIs that were the most essential parts of the Facebook Platform.



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E. The Decision to Remove Developer Access to the Friends, News Feed, Events, and Other Crucial APIs Lacked Any Legitimate Justification

181. The engineers tasked with implementing Zuckerberg's decision to restrict access to the APIs were baffled. The decision made no technical sense whatsoever. Indeed, there was no justification for it other than to squelch competitors who threatened Facebook's dominant position and DTBE.

182. As Facebook engineer, David Poll, had written to all Platform Engineers earlier in 2011, the decision would mean gutting the Facebook Platform of functionality used—and needed—by some of the most important mobile apps built on Facebook's Platform:

> I was thinking about the Platform 3.0 friend list change a bit as I was using my Android phone tonight and realized that two for the apps that most impact my day-to-day mobile experience will be completely, irrevocably broken by this change . . . . In both of these cases, the apps are adding real value to my experience, and in both of those cases, I have zero expectation that any of my friends will be using the app. The fundamental problem I'm having with this change is that my friend list is my information—it's part of who I am, and for Facebook to shut down this access primarily comes across to me as FB intruding upon and shutting down my own access to my own information.

183. Poll concluded, "No matter how you slice it, this change is going to have a significant negative impact on my day-to-day smartphone experience."

184. Poll was correct. The change meant breaking applications that added significant value to Facebook's network and increased valuable user engagement on Facebook's core product. The decision to deliberately break these applications had only one plausible purpose—to strengthen the DTBE and to ensure that competitors could not create rival social networks that could compete with Facebook.

185. That proposition was entirely obvious to those responsible for Facebook's Platform. In an August 2013 e-mail, senior Platform engineer Bryan Klimt wrote to Ilya Sukhar, Facebook's Head of Developer Products and Senior Engineer working on its APIs, and others working on Facebook's Platform, stating that the reason for the decision to block access to the Friends and News Feed APIs was to exclude competitors and that all other reasons were simply false and pretextual. To begin with, Klimt was clear that the removal of the APIs was "ridiculous" because they were so essential to the Facebook Platform:

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> I'm trying to write a post about how bad an idea it would be to remove the api that lets you get a list of user's friends from Facebook Platform. In order to illustrate my point, I'd like to satirically suggest removing some API that is so core to the developer experience and that removing it would be ridiculous on its face. For example, removing the Windows API method that lets you create a new window. Or removing the Twilio API method that lets you send a text message. Both suggestions are utterly insane. The problem is, for Facebook Platform, removing the method to let you get a list of friends literally is already that ridiculous. I can't think of an example more ridiculous to parody it with.

186. Klimt then dispelled any notion that the APIs were being removed for any technical or functionality-driven reason:

> Before we discuss in more detail, I'd like to clear up some misconceptions about the deprecations. I've heard some rumors floating around about why we are doing this. But many of them are clearly pablum designed to make engineers think this decision has solid technical reasons. It does not. 1/ This API can be abused so we can remove it. False. That is a non-sequitur. Lots of APIs can be abused. Our whole product can be abused. That's why we have one of the best teams in the industry at detecting and stemming abuse. That team, plus Unified Review, is more than sufficient to deal with any theoretical abuse coming from this API. Even if this were true, who wants to be in that classroom where the whole class is punished for transgressions of a few?

187. Klimt also was clear that the APIs were not being removed in favor of new or different APIs providing the same features:

> 2/ It's okay to remove because we've provided alternatives for common uses. False. If you think that's true, then I don't think you realize why developer platforms exist. If we wanted to limit Facebook to the set of use cases we've already imagined, we could just do that ourselves, and not even have a Platform. The purpose of a Platform is to let people build new things on top of it. It's to enable the whole universe of ideas that anyone in the world could think of. Developers out there will have all sorts of crazy ideas. We want them to build those crazy ideas on top of Facebook. Do you know why Facebook was originally built for the WWW instead of being part of CompuServe or AOL's proprietary networks? It's because the web is an open and extensible platform. It lets developers make their craziest become reality.

188. Klimt then explained that the real reason was to hurt Facebook's competitors and prevent them from competing with Facebook:

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> So, if neither of those reasons explains why we are doing this, what's driving it? The only reason I've heard that makes sense is that we are worried about people "stealing the graph", ***we are doing this as a protectionist grab to make sure no one else can make a competing social network by bootstrapping with our social graph***. Okay, so let's assume for a minute that the social graph does belong to us, and not to our users. And let's even go so far as to assume that this is a real problem, although, I'm not convinced it is. I mean, concerns that other companies will steal our friend graph may just be paranoia. But for the sake of argument, let's say it's not. Then what? ***We're removing the core API in our developer platform. Out of concerns that someone will steal our social network product.*** That sends a clear message to developers: Facebook Platform comes second to Facebook the Social Network Product. This has been a criticism all along with our Platform. When you go read the blog posts critical of our Platform, they all hit on this same point. When our APIs are subjugated to the whims of our other products, they can't be stable. And an unstable platform isn't really a platform at all. So then you are left with 2 big problems. 1/ How do you convince external developers to build on a platform where the most basic core APIs may be removed at any time? I mean, the only big value we bring to the table right now is in distribution and discovery, and that's going to encourage developers to do only the most superficial integration with Facebook. Basically, they're going to do just enough to be able to use Neko ads. 2/ How do you convince internal developers to work on Platform knowing it's only ever going to play second fiddle to the rest of the company? I mean why should any of us work on a product that could be crippled at any time to benefit another team? If I worked on Platform, I would be seriously reconsidering my options if this API gets deprecated.

(emphasis added).

189. Klimt was clear—the decision to remove the APIs lacked any technical or business justification other than to prevent a competitor from creating a competing social network, eroding the DTBE protecting Facebook's business. Any proffered justification by anyone at Facebook to the contrary was entirely pretextual.

190. Moreover, the decision to remove the APIs permanently destroyed the value of Facebook's Platform. If developers could not trust Facebook to maintain the APIs as stable parts of its Platform, they would not risk writing apps for the Platform in the future. The decision meant scuttling Facebook's valuable Platform for the ability to prevent a rival social network from taking hold.

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191. Sukhar responded to Klimt, noting that he agreed and that he "talks about this every single meeting." His pleas to Vernal, Purdy and Zuckerberg to reverse their decision fell on deaf ears. The decision had been made and Klimt and Sukhar would have to implement it.

192. Facebook continued its audit of apps that relied on the APIs. Most of the Apps were important to the Facebook ecosystem. Indeed, Facebook acknowledged they "are not spammy or crap, but apps users like a lot." Nonetheless, Facebook's Papamiltiadis concluded that, among others, apps like Sunrise, Yahoo, IFTT, Friendcaster, MyLife, Sync.me, YouTube, Contacts+, and Bitly "overlap with Facebook products" and "could compromise our success in those areas."

193. Facebook's careful monitoring of competitive apps continued well into 2013, and given its heavy reliance on data secretly collected by Onavo, Facebook purchased Onavo on October 14, 2013. Facebook used that data to determine which apps competed with its social network and thus posed a threat to the DTBE. It then targeted those companies for withdrawal of API access and coerced data reciprocity agreements.

194. In October 2013, Facebook's Purdy reported that Facebook was dividing apps into "three buckets: existing competitors, possible future competitors, developers that we have alignment with on business model." Facebook's Eddie O'Neil believed that the "separation between those categories doesn't feel clean" and that the overlap was problematic. As O'Neil observed, "apps can transition from aligned to competitive and will ultimately make us sad that we leaked a bunch of data to them when they were aligned."

195. Sukhar objected to the entire exercise, noting that he had been speaking to many dozens of developers "who will get totally fucked by this and it won't even be for the right reason." Sukhar explained that his "engineers think ***this plan is insane*** and I'm not going to support an all hands [meeting] to convince them otherwise." (emphasis added).

196. As Sukhar noted, the decision to withdraw the Friends, News Feed, and Events APIs from the Platform made no technical sense whatsoever, and Sukhar could not bring himself to tell his engineers—who saw through the ruse—otherwise. It was obvious that Facebook was seeking to squelch potential competition—namely, by preventing user growth and engagement for competitive apps. As one

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Facebook engineer commented about the obvious purpose of the plan to remove the APIs: "I understand we want to make it hard for a developer to grow a new app."

197. The review of apps continued and specific decisions with respect to certain highly sensitive competitors were escalated to Mark Zuckerberg. As one internal Facebook e-mail explained:

> We maintain a small list of strategic competitors that Mark personally reviewed. Apps produced by the companies on the list are subject to a number of restrictions outlined below. Any usage beyond that specified is not permitted without Mark level signoff.

198. In December 2013, Klimt complained to Sukhar about the audit and categorization process:

> So we are literally going to group apps into buckets based on how scared we are of them and give them different APIs? How do we ever hope to document this? Put a link at the top of the page that says "Going to be building a messenger app? Click here to filter out the APIs we won't let you use!"
>
> And what if an app adds a feature that moves them from 2 to 1. Shit just breaks? And messaging app can't use Facebook login? So the message is, "if you're going to compete with us at all, make sure you don't integrate with us at all."? I am just dumbfounded.

199. As Poll recognized in response to Klimt's complaint, the changes to Facebook's Platform were "more than complicated, it's sort of unethical." Klimt agreed with the assessment, noting that the API removal "feels unethical somehow . . . . It just makes me feel like a bad person."

F. Facebook Prepares to Announce Removal of the APIs

200. Zuckerberg decided to announce the API removal under the cover of a major change to the Facebook Platform, codenamed PS12N, which would be announced at the next Facebook F8 Developer Conference. Facebook's engineers were accordingly instructed in September 2013 to bury the changes to the API and announce them quietly along with the changes that would be announced at the conference.

201. In the run-up to its API withdrawal announcement, Facebook continued its audit of applications on its platform that were using the APIs. During that process Facebook continued to classify

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potential competitors, including LinkedIn and AirBnB, as companies that would be denied access with no whitelist exception.

202. Although Facebook knew that the APIs were going to be removed by the next F8 conference, it continued to tell developers to rely on them. As a Facebook Platform evangelist noted about one particular document frequently shared with developers, "the language in here around friend permissions is very counter to our upcoming platform simplification efforts" and "feels against the spirit of where we are headed."

203. That was, however, precisely what Facebook wanted—to continue to entice developers to build their software and their businesses on APIs that made them dependent on Facebook. The use of the APIs meant that competitors could be abruptly shut out of the market, useful apps could be extorted for valuable social data, and the rest could simply be destroyed.

204. By October 2013, Facebook required certain application developers it chose to whitelist to sign Private Extended API Agreements, which obligated them to purchase large amounts of advertising or to provide their own valuable social data to Facebook in exchange for continued access. That month, for example, Facebook whitelisted Royal Bank of Canada's application in exchange for the purchase of social data through Facebook's NEKO advertising platform. [redacted]

205. Facebook catalogued and tracked developers on its platform that would likely complain about the decision, creating negative press. Facebook's internal employees tasked with crafting a PR message explained the undertaking in a December 2013 e-mail:

> In prep for Platform Simplification, we're putting together a list of developers who we think could be noisy and negative in press about the changes we're making: Primarily we think it will be a list of the usual suspects from past policy enforcements. We'd love to pull from your historic knowledge on the topic. Is there anybody you'd add to the list below? We're going to build plans around how we manage and communicate with each of these developers. There are also comms plans in the works for working with developers who are high ad spenders and friends of Mark/Sheryl."

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206. Facebook planned to manage its message carefully, as its decision likely would alienate even those developers who were making large purchases of social data from Facebook through ads and/or who were friends of Facebook's two most senior executives, Zuckerberg and Sandberg. Those developers were identified and the message to them was carefully crafted to avoid a PR disaster. For most application developers, however, the decision would result in the complete exclusion of their applications from Facebook's ecosystem—which would likely be fatal to their businesses.

207. Facebook targeted potentially "noisy" or "negative" developers individually, including, but not limited to, the following applications and developers: iLike, Rock You, Zynga, Path, Flipboard, Slide, Social, Fixer, SocialCam, Viddy, BranchOut, Vince, Voxer, Message Me, Lulu, Anil Dash, Super Cell, Kabam, Washington Post, Guardian, The Wall Street Journal, Jason Calacanis, Cir.cl, Bang with Friends, Tinder, Social Roulette, App Wonder, Ark, Vintage Camera, and Girls Around Me.

208. Facebook also used call-log data secretly collected by Android users to target developers and applications to be shut down.

209. The entire process led Facebook engineer George Lee to lament:

> We sold developers a bill of goods around implicit OG [Open Graph] 2 years ago and have been telling them ever since that one of the best things they could do is to a/b/ test and optimize the content and creative. Now that we have successes. . . . We're talking about taking it away . . . . [Developers] have invested a lot of time to establish that traffic in our system . . . . The more I think about this, the more concern I have over the pile of asks were [sic] making of our developers this year. PS12N is going to require them to alter how they deal with APIs (and for limited value).

210. Thus, as Facebook continued to prepare its API withdrawal announcement, Facebook's own executives recognized that Platform developers had been conned into relying on Facebook's APIs. Facebook knew full well that it intended to remove the APIs, but it allowed and encouraged developers to build entire businesses on and around them. As Lee put it, they were sold a "bill of goods."

211. By 2014, it was clear that with the exception of a few apps and developers, most would be denied access entirely to the Friends, News Feed, and Events APIs.

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212. In January 2014, Zuckerberg debated denying API access to dating apps. Facebook decided that it would whitelist Tinder and other anointed dating apps and shut down the rest, clearing the way for the selected apps to dominate the dating market. Zuckerberg reasoned that although Facebook would ultimately create its own dating app, it would let Tinder and a select few others to survive until Facebook's competing app was ready:

> I've been thinking a lot about Tinder and other people recommendation apps since about 10% of people in many countries are using a Tinder now. People recommendations seems like something that should be right up our alley, but it's currently something we're not very good at. Tinder's growth is especially alarming to me because their product is built completely on Facebook data, and it's much better than anything we've built for recommendations using the same corpus . . . . I think this is a big and important space and it's something we should have a team working on—probably to develop people recommendation Hunch sections for now.

213. Zuckerberg became increasingly involved in assessing whether individual apps would be whitelisted when the APIs were removed. Facebook's senior-most executives accordingly prepared recommendations for his consideration. In a January 2014 presentation entitled, "Slides for Mark," for example, Facebook employees summarized the results of the ongoing app audit. The presentation observed that the changes would make it "impossible to build" an app without a whitelist agreement with Facebook. The presentation made special recommendations for apps that purchased large amounts of social data through Facebook's NEKO platform or whose developers were friends with Zuckerberg or Sandberg. The bulk of the 41,191 apps that relied on the Friends, News Feed, or Events APIs, however, would be shut out and, as a result, completely destroyed.

214. Although the effect on these apps was clear, Facebook continued to evangelize the APIs to developers. In January 2014, Facebook's George Lee sounded the alarm to Purdy and Vernal, which fell on willfully deaf ears:

> [P]artner managers are still selling products that we ask them to sell, so when it comes to feed integration, we're still telling people to use [Open Graph]. The last f8 was all about implicit [Open Graph], so while we may have decided amongst ourselves that this is no longer the future without an alternative we don't have anything to tell current [developers] (so partners

> continue to tell them to use [Open Graph] and they continue to integrate it).

215. The plan to quietly take away the APIs in favor of a new crippled developer platform was called the "switcharoo plan" by Facebook's engineers. It was clear to all involved that the announcement of the changes to the platform at the upcoming F8 conference was cover for the radical changes Facebook planned to make to its platform—namely, the removal of the Friends, News Feed, and Events APIs.

216. During March 2014, Facebook's engineers and employees continued to be baffled by the upcoming decision. As one employee noted:

> It seems a bit odd that we block other developers from doing things on our platform that we're ok with doing ourselves. Do we consider ourselves exempted? That seems a little unfair especially when our stance on some of these policies is that they're about ensuring trusts and a great experience. My mental model on how platform is a level playing field could be way off though.

217. The decision made no sense to Facebook's own employees, particularly because Facebook itself needed the APIs to make their own competing applications, including Facebook's Messenger application. Facebook's executives ignored all of the concerns raised by their employees, including their API engineers, and continued to drive towards the announcement of the removal of the APIs at F8.

218. The real reason for the removal of the APIs was kept tightly under wraps. In April 2014, right before the announcement, Vernal warned Sukhar that if any mention was made of the competitive reasons for the removal of the APIs (as Sukhar wanted), there would be a "high likelihood of breaking into jail."

G. The Announcement at F8

219. On April 30, 2014, Facebook announced "The New Facebook Login and Graph API 2.0" on Facebook's website. Facebook heralded changes to its new Login system for several pages. Buried in the announcement was a quiet statement about the Platform's most important APIs—the Friend, News Feed, and Events APIs: "In addition to the above, we are removing several rarely used API endpoints; visit our changelog for details."

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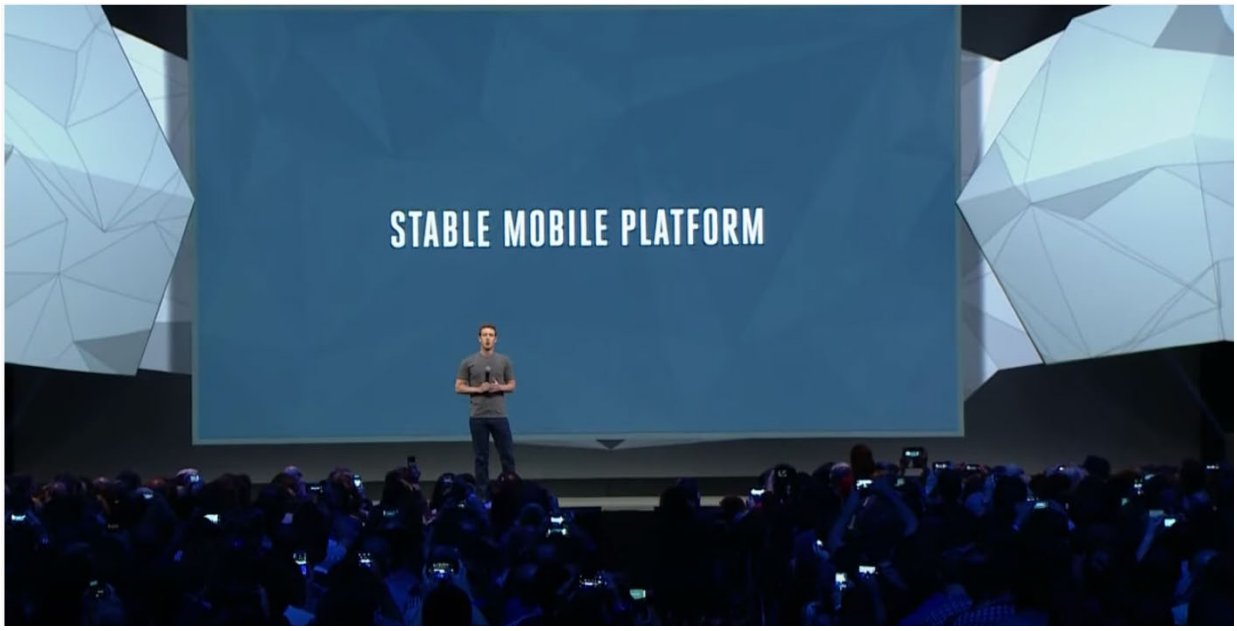
220. These APIs were not ***rarely used*** at all. Tens of thousands of third-party apps were actively using and building on the APIs. Internal Facebook engineers likened them to essential APIs in Microsoft's Windows and were outraged at the removal. Five of the top ten Facebook Apps surveyed in December 2012 relied heavily on them. The announcement was entirely false and was deliberately buried beneath other API announcements to avoid drawing attention to the competition-crippling effect of the decision. In fact, today, the changelog referred to in the announcement is no longer accessible on Facebook's page even though years of other changes are.

221. When Mark Zuckerberg took the stage at F8 days later for his keynote speech, there was no mention of the removed APIs. Instead, Zuckerberg emphasized the "stability" of Facebook's mobile platform just as Facebook quietly removed some of the most heavily relied-upon and necessary APIs in Facebook's Platform.



222. At the twenty developer sessions preceding the announcement, not one mention was made of the API removal or that the upcoming changes would simply break nearly all of the more than 40,000 third-party apps that relied on the APIs.

IV. THE SURVEILLANCE AND ACQUISITION OF COMPETITIVE THREATS

223. To ensure that its scheme to maintain and expand its market power would work, Facebook had to control an important source of competition: independent social networks and producers of social

data. Although Facebook could simply destroy any competition that relied on its Platform by denying access to essential APIs, this would do nothing to stop a competitor that was growing its network of engaged users entirely independent of Facebook.

224. To detect such threats before they became too formidable, Facebook sought a way to covertly surveil millions of mobile users to determine what applications they were using, and how. Mobile applications were particularly important—and concerning—to Facebook, as desktop engagement was shrinking while mobile apps rapidly proliferated. By 2012, it was clear to Zuckerberg and to Facebook that any threat to its dominance would come from a mobile application. As explained in this section, Facebook used mobile spyware on an unprecedented scale to surveil, identify, and eventually remove from the market through acquisition competitors that independently threatened Facebook's dominance and/or the DTBE protecting its monopoly, market power and business.

A. Facebook Relies on Onavo's Surveillance of Facebook's Competitors, and Acquires and Uses Onavo's Assets

225. Onavo was an Israeli mobile web analytics company founded by Roi Tiger and Guy Rosen in 2010. The company designed spyware designed to surveil users as they used their mobile devices. To obtain extensive information on a user's usage of mobile applications and of bandwidth, Onavo cloaked its spyware in virtual private networks ("VPNs"), data compression, and even in mobile privacy apps.

226. Onavo sold the mobile usage data it collected to Facebook, which in turn used the real-time information it received from Onavo to determine which mobile applications posed a threat to Facebook's dominance and to the DTBE protecting Facebook from new entrants and competition. Facebook used Onavo data to: (a) identify and target competitors from which Facebook could demand Whitelist and Data Sharing Agreements; (b) identify and target competitors to whom Facebook would completely deny Platform access; and (c) identify and target competitors that Facebook would remove from the competitive landscape entirely through acquisition.

227. Facebook received Onavo information in real time, which included the two most important metrics for competing mobile applications—their reach and engagement. Reach measures the size of an application's user base, and "engagement" measures the extent to which users actively engage with the

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application. An application with high reach but low engagement cannot generate the sort of social data that Facebook needs to feed its advertising platform with actionable targeting data. Conversely, an application with high engagement but low reach doesn't generate social data from enough people to attract a broad base of advertisers. The greatest threat to Facebook's business would come from an application that exhibited strong reach and strong engagement—and especially one that showed rapid growth in both metrics, indicating the development of network effects.

228. As the potential threat to its market dominance from mobile applications continued to grow, Facebook sought to obtain exclusive control over Onavo's surveillance data—and over its mobile spyware code and installed base. On October 13, 2013, Facebook acquired Onavo.

229. On its blog, Onavo's CEO Guy Rosen and CTO Roi Tiger, announced that Onavo would continue as a standalone brand: "When the transaction closes, we plan to continue running the Onavo mobile utility apps as a standalone brand. As always, we remain committed to the privacy of people who use our application, and that commitment will not change."

230. Facebook, however, had other plans. It immediately began integrating Onavo's applications into both its business operations and its acquisition strategy. Facebook, for example, began analyzing data secretly collected from Onavo's Protect software, which was a massive surveillance and data collection scheme disguised as VPN software. Billed as a way to "keep you and your data safe," Onavo Protect in fact monitored all web and mobile application traffic on a user's mobile device.

231. When an Onavo Protect user opened a mobile app or website, Onavo software secretly redirected the traffic to Facebook's servers, where the action was logged in a massive database. Facebook product teams then analyzed the aggregated Onavo data to determine which apps and features people were using in real time, how frequently they used the apps, and for how long. If the data in an app was not encrypted, this information was as specific as (for example) the number of photos the average user likes or posts in a week in that app.

232. Based on a 2017 estimate, Onavo's mobile apps were downloaded an estimated twenty-four million times, and Facebook collected, compiled, and leveraged all of the collected data. By February 2018, Onavo apps had been downloaded thirty-three million times across both iOS and Android.

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233. As the former chief technologist for the Federal Trade Commission remarked to the press, Onavo was being leveraged against user interests to stifle competitive innovation:

> Instead of converting data for the purpose of advertising, they're converting it to competitive intelligence . . . . Essentially this approach takes data generated by consumers and uses it in ways that directly hurts their interests—for example, to impede competitive innovation.

234. Since 2011 and through the present, Onavo products have provided Facebook with real time data about mobile users on a breadth and scale not available through any other service or app. Using Onavo data, Facebook was able to determine which potential competitors it could target for its Whitelist and Data Sharing agreements; which competitors it could destroy by denying access to crucial APIs; and which competitors is needed to remove from the market through acquisition to preserve its monopoly position and DTBE.

235. Moreover, by monitoring potential threats, Facebook ensured that it had no blind spot—any application that posed a threat to its dominance was dealt with through anticompetitive and unlawful Whitelist and Data Sharing Agreements, destruction by denial of access to vital APIs on Facebook's platform, or by acquisition.

236. By acquiring Onavo, Facebook obtained exclusive access to the only real-time and high-quality source for mobile app user metrics at scale. Because of the acquisition of Onavo, Facebook strengthened the DTBE by ensuring that any threat to its dominance of the Social Advertising Market was dealt with at the earliest possible stage. Indeed, through Onavo, Facebook was able to (and did) track mobile app usage and trends essentially from launch. If a potential Facebook killer was on the rise, Facebook had a unique tool to identify it before anyone else could—and Facebook used it.

237. In the years after it acquired Onavo, Facebook continued to aggressively leverage the company's codebase in deceptively labeled apps that facilitated maximum surveillance and data collection of mobile users. For example, Facebook placed Onavo spyware in apps whose stated purposes required privileged access to user's mobile devices (in some cases, super-user privileges), allowing Facebook to gather data on virtually every aspect of a user's mobile device usage.

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238. The abuses by Facebook were so flagrant that on August 22, 2018, Apple banned Facebook's Onavo app from its App Store. Apple ejected Facebook's app from its marketplace because it violated Apple's rules prohibiting apps from using data in ways far beyond what is required to run the app and provide advertising. In other words, because Onavo Protect was leveraging far more data than any VPN could conceivably need, it was clear that the true purpose of the app was to spy on Onavo users, and Apple would not allow it.

239. Indeed, the amount of surveillance was jaw-dropping. Facebook's Onavo Protect app reported on users' activities whether their screens were on or off; whether they used WiFi or cellular data; and even when the VPN was turned off. There was simply no rational relationship between the data collected and the purported purpose of the application. Put simply, a VPN that collected data even when the VPN was off was an obvious subterfuge for blatant spying on user behavior.

240. Undeterred, Facebook repackaged its Onavo spyware as a Facebook Research VPN app. Facebook sidestepped the App Store by rewarding teenagers and adults when they downloaded the Research app and gave it root—superuser—access to network traffic on their mobile devices. Facebook has been leveraging its Onavo code in similar ways since at least 2016, administering the program under the codename "Project Atlas"—a name suited to its goal of surveilling app usage on mobile devices in real time.

241. When the news broke in January 2019 that Facebook's Research apps were repackaged Onavo apps designed to spy on users, Facebook immediately withdrew the programs from the Apple App store.

242. Apple again concluded that Facebook had tried to violate its policies. Using Apple's Enterprise Developer Program, which allows the installation of a certificate or policy that provides root access to an iPhone or iPad, Facebook obtained a level of administrative privilege designed for a company's internal IT department. Thus, using a system that allowed organizations to manage their internal mobile devices, Facebook provided its spyware super user access to regular people's iPhones and iPads. Apple balked at the abuse. An Apple spokesman stated:

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> We designed our Enterprise Developer Program solely for the internal distribution of apps within an organization. Facebook has been using their membership to distribute a data-collecting app to customers, which is a clear breach of their agreement with Apple. Any developer using their enterprise certificates to distribute apps to consumers will have their certificates revoked, which is what we did in this case to protect our users and their data.

243. U.S. Senator Mark Warner immediately called for new legislation to prevent the sort of abuse which Facebook had engaged in. U.S. Senator Richard Blumenthal issued a fierce statement rebuking Facebook's repackaging of the Onavo spyware app as "research": "Wiretapping teens is not research, and it should never be permissible."

244. In addition to Onavo's Protect app, Facebook has attempted to deploy its surveillance software as other forms of utility applications that require extensive or privileged access to mobile devices. For example, Facebook released the Onavo Bolt app, which locked apps behind a passcode or fingerprint while it covertly surveilled users—and sent Facebook the results. Facebook also shut that app down the very day that its surveillance functionality was discovered. The Onavo Bolt app had been installed approximately 10 million times.

245. Facebook continues to possess Onavo's code base and is likely, as it has done before, to repackage its surveillance software into yet another app. Facebook can also easily incorporate surveillance code into any of its mobile applications that enjoy massive installed bases and reach, including Instagram and WhatsApp. If left undeterred, Facebook will likely continue leveraging the surveillance software, infrastructure, and analysis that it acquired as part of its acquisition of Onavo.

B. Facebook Identifies Instagram as a Threat and Acquires the Company

246. Data from Onavo reported a significant threat on the horizon likely as early as 2011 (and certainly by 2012): a photo-sharing mobile application called Instagram. That app had its origins when founder Kevin Systrom, then 27, learned to code over nights and weekends. Systrom developed an app called Burbn, which allowed users to check in, post plans and share photos. The photo sharing feature immediately became the app's most popular.

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247. After meeting venture capitalists from Baseline Ventures and Andreesen Horowitz, Systrom received $500,000 of funding. Systrom soon after met co-founder Mike Krieger—then 25 years old—who focused on the user experience of the app.

248. Seeing the positive reception to the photo sharing aspect of the Burbn app, Krieger and Systrom decided to pivot their business to focus on that feature. They studied their rivals in the category, including an app called Hipstamatic, which included photo-editing features, including the ability to add filters to photos. Hipstamatic, however, had no social capabilities.

249. Seeking to bridge the gap between Hipstamatic photo features and Facebook's elements, Systrom and Krieger stripped Burbn down to its photo, comment, and like capabilities. They then renamed the app Instagram, containing the words "instant" and "telegram."

250. Systrom and Krieger worked tirelessly to polish the user experience of their new application, designing Instagram to streamline the process of taking photos on mobile devices and uploading them to a social platform. The app had a minimalist focus, requiring as few actions as possible from the user. After eight weeks of fine-tuning, the app entered its beta phase and the founders prepared to launch it on iOS.

251. On October 6, 2010, Instagram launched on iOS. That very day it became the top free photo-sharing app on Apple's App Store, racking up twenty-five thousand downloads. Instagram's founders were stunned at the response. As Systrom noted after the launch: "First off, we have to say that we never expected the overwhelming response that we've seen. We went from literally a handful of users to the #1 free photography app in a matter of hours."

252. By the end of the first week, Instagram had been downloaded 100,000 times, and by mid-December 2010, its total downloads had reached one million. The timing of the app was impeccable, as the iPhone 4, with its improved camera, had launched just a few months earlier in June 2010.

253. With Instagram on the rise, investors clamored for a stake. In February 2011, Instagram raised $7 million in Series A funding from a variety of investors, including Benchmark Capital, which valued the company at around $25 million. In March 2011, Jack Dorsey, the CEO of Twitter, pursued the

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idea of acquiring Instagram, and Twitter made an offer of approximately $500 million dollars for the company. Systrom declined.

254. By March 2012, the app's user base had swelled to 27 million. That April, Instagram was released on Android phones and was downloaded more than one million times in less than one day. At the time, the company was also in talks to receive another $500 million funding round.

255. Internally, Facebook carefully tracked Instagram's meteoric rise, including through the intelligence it received from Onavo's data collection. Instagram clearly posed a competitive threat to Facebook's dominant position, including in the rapidly expanding market for mobile-based social applications.

256. Unlike Instagram's streamlined approach to photo sharing, Facebook's photo-sharing was onerous. As Facebook internally recognized, mobile devices were changing how users uploaded and shared photos and it was causing severe problems for Facebook's business. As an internal Facebook presentation explained:

> Before phones, people would take their digital cameras out for special events, vacations, etc. Then, they would post a bunch of photos at once—after uploading them to their computer. With phones, people take and share more photos more often. They share them individually (rather than waiting to upload a bunch at once).

257. This resulted in a large drop in bulk photo uploads on Facebook's core social networking product—a 29% decline from 2012 to 2014. Facebook also observed that text posts were "tanking" 26% because of "migration to phones with cameras." The data was clear—Facebook had to shut down the looming threat from the new photo-sharing app. If Facebook did nothing, Instagram's user base would imminently eclipse Facebook's at its current growth rate, eroding and perhaps even destroying Facebook's DTBE. An independent app with no ties or reliance on Facebook, Instagram could become not only a competing mobile-based social app, but a social network unto itself that could rival Facebook in the amount of engagement and social data it could produce and monetize.

258. In February 2012, Zuckerberg discussed the potential acquisition of Instagram with Facebook Chief Financial Officer, David Ebersman. Zuckerberg explained that he had "been thinking

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about . . . how much [Facebook] should be willing to pay to acquire mobile app companies like Instagram . . . that are building networks that are competitive with our own." Mr. Zuckerberg told Mr. Ebersman that these "businesses are nascent but the networks are established, the brands are already meaningful and if they grow to a large scale they could be very disruptive to us."

259. In response, Ebersman asked Zuckerberg whether the goals of the acquisition would be to: (1) neutralize a potential competitor; (2) acquire talent; or (3) integrate Instagram's product with Facebook's to improve its service. Zuckerberg replied that the purpose of the transaction would be to neutralize Instagram, saying that the goals of the deal were "a combination of (1) and (3)." He explained:

> One thing that may make (1) more reasonable here is that there are network effects around social products and a finite number of different social mechanics to invent. Once someone wins at a specific mechanic, it's difficult for others to supplant them without doing something different. It's possible someone beats Instagram by building something that is better to the point that they get network migration, but this is harder as long as Instagram keeps running as a product.

260. Zuckerberg quickly understood that Instagram's meteoric rise was a threat to Facebook's entire business. With a ready-made network of users, Instagram's dominance of one of the "mechanics" fueling Facebook's engagement would mean the disruption of the DTBE protecting Facebook. If Instagram took away engagement from Facebook, Facebook would lose some of its ability to target users for content and to advertise to them, which in turn meant less engagement. The virtuous circle would reverse itself.

261. As Zuckerberg himself put it:

> By a combination of (1) and (3), one way of looking at this is that what we're really buying is time. Even if some new competitor springs [sic] up, buying Instagram, Path, Foursquare, etc [sic] now will give us a year or more to integrate their dynamics before anyone can get close to their scale again. Within that time, if we incorporate the social mechanics they were using, those new products won't get much traction since we'll already have their mechanics deployed at scale.

262. It was clear to Zuckerberg that what he was "really buying is time," as eventually a competitor would emerge that threatened Facebook's DTBE and dominance over its walled garden.

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Zuckerberg continued the discussion through March 2012, telling Mike Schroepfer, Facebook's Chief Technology Officer, that acquiring Instagram would provide the company with "[i]nsurance" for Facebook's main product. Schroepfer agreed, responding that "not losing strategic position in photos is worth a lot of money." He added that the "biggest risk" would be if Facebook were to "kill" Instagram "by not investing in the company and thereby opening a window for a new entrant."

263. In a message to another Facebook employee on April 5, 2012, Zuckerberg said that "Instagram can hurt us meaningfully without becoming a huge business." In contrast, he did not view other smaller firms, such as Pinterest and Foursquare, as imminently dangerous competitive threats. As he noted, if these companies "become big we'll just regret not doing them . . . Or we can buy them then, or build them along the way." In an all-hands meeting the following day, Mr. Zuckerberg responded to a question about Instagram's rapid growth by saying that "we need to dig ourselves out of a hole." He also told employees at the company that Instagram is "growing really quickly" and that it would be "tough to dislodge them."

264. After direct talks with Mark Zuckerberg, Facebook made Instagram an offer to purchase the company for $1 billion in April 2012, with the express promise that the company would remain independently managed. Facebook consummated the deal immediately prior to its IPO.

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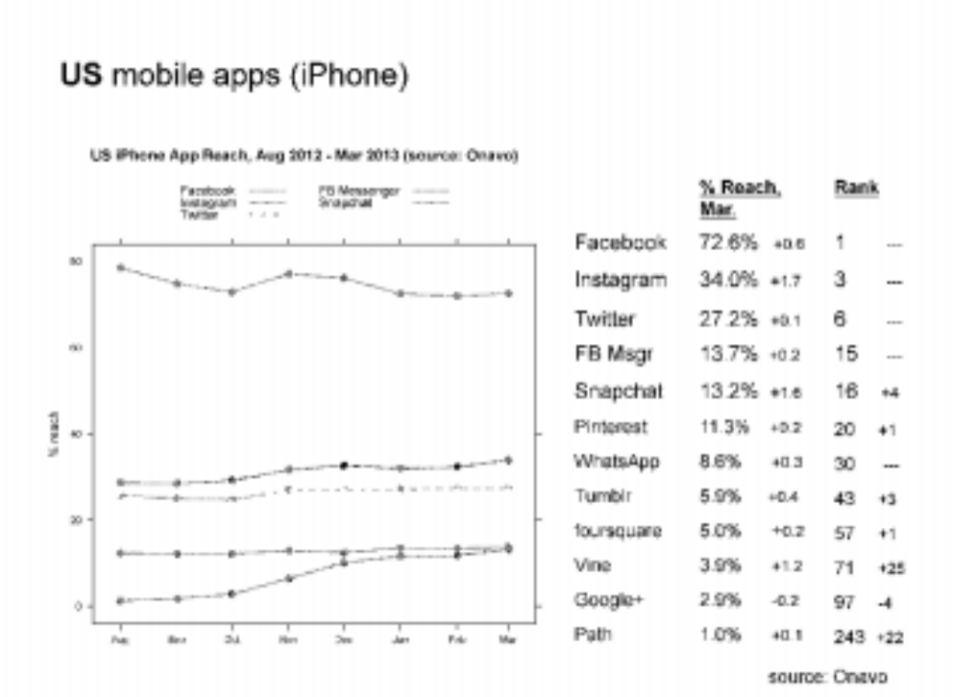
265. Facebook's own Onavo data, which was obtained and published by Buzzfeed, made clear that Instagram posed an existential threat to Facebook. By February 2013, Instagram had grown to 34% of the total user reach among all social apps.



266. With its Instagram acquisition, Facebook's share of mobile photo sharing app users ballooned as Facebook added Instagram's 34% user reach to Facebook's own 72% user reach.

267. Although Instagram had not at the time of the merger meaningfully monetized its user engagement and social data, Facebook quickly did so. By the end of 2013, Facebook had begun showing ads on Instagram. Since then, Instagram has become an ever-increasing proportion of Facebook's advertising revenue and a large share of Facebook's user growth.

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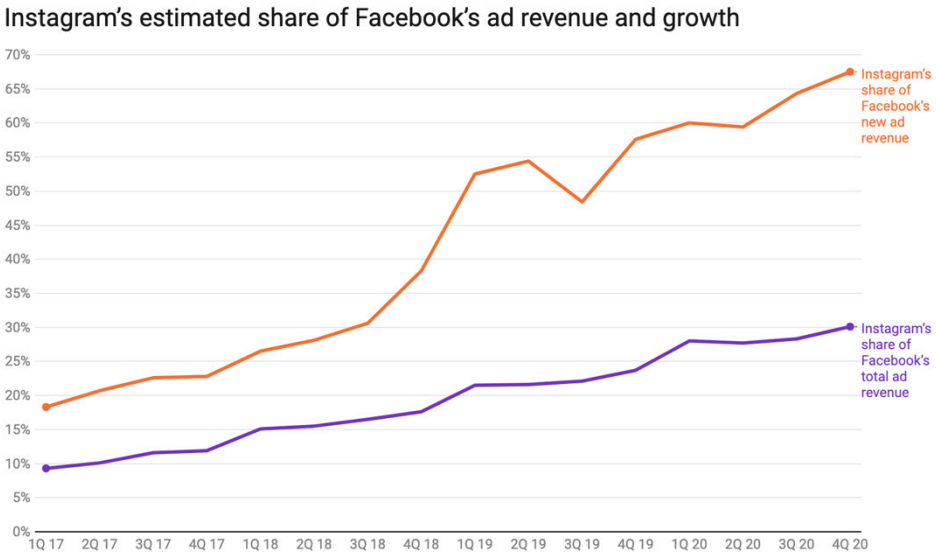
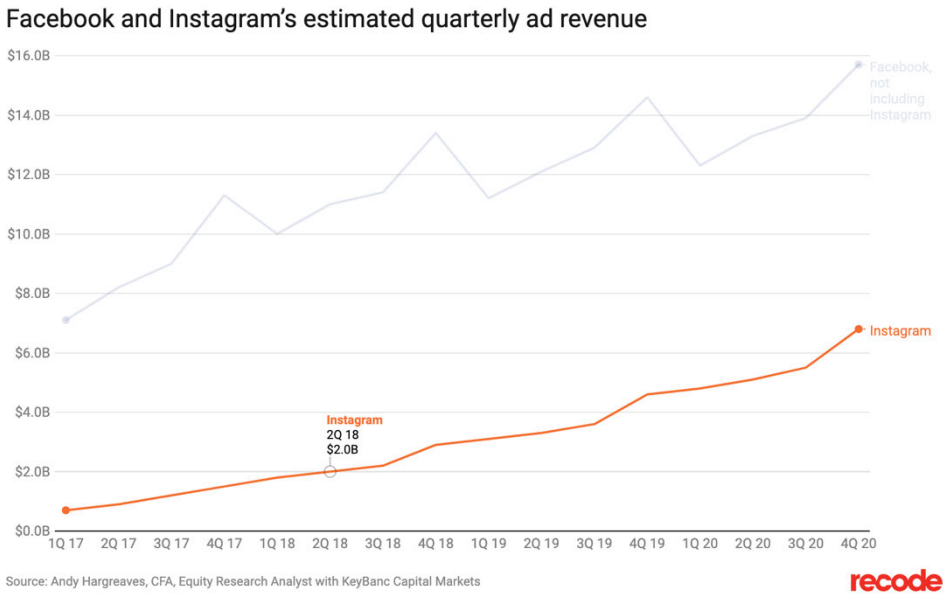
268. In 2017, Instagram generated $2 billion, or about 15 percent, of Facebook's $13 billion in ad revenue.



269. By the end of 2018, Instagram had a billion users and was estimated to generate $8 billion to $9 billion in revenue for Facebook in 2018.

270. Instagram also accounts for the bulk of Facebook's new revenue since the acquisition.



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271. Instagram allowed Facebook to grow its social network as Facebook's desktop and core mobile application began to stagnate. Together, Facebook and Instagram captured and monetized the social data generated across both apps.

272. The Instagram acquisition ensured that Instagram could not become a rival social network that could generate enough social data to erode the DTBE protecting Facebook's business. It also ensured that Instagram could not build and grow its own developer platform, which would threaten Facebook's scheme to dominate the Social Advertising Market by denying and/or leveraging social-data dependent applications' access to essential functionality. The acquisition accordingly also ensured that Facebook rivals required to enter into Whitelist and Data Sharing Agreements had no other platform choice—and thus no option but to hand over their social data to Facebook. Finally, the acquisition ensured that Instagram could not sell highly targeted advertising in the Social Advertising Market, which would mean there would be a material check on Facebook's ability to raise prices.

273. At the time of its IPO in 2012, Facebook struggled to grow its mobile product, let alone to meaningfully monetize the social data it collected through advertising. By 2019, Facebook had achieved an 83% share of the Social Advertising Market by leveraging its Instagram mobile application and its Facebook mobile and desktop applications. No other company comes close in market share.

274. Instagram was instrumental to Facebook's explosive growth in the Social Advertising Market. From the fourth quarter of 2010 until the first quarter of 2011, Facebook's revenue was flat. From 2011's holiday cycle to 2012's opening three months (right before its IPO), Facebook actually ***shrank***. Facebook then experienced a sudden reversal after its acquisition of Instagram, as mobile revenue began to account for a significant share of revenues, and Instagram allowed Facebook to grow with the rise of mobile applications.

275. Notably, Facebook's acquisition of Instagram also allowed Facebook to exclude third-party apps that provided photo and video sharing functionality from its Platform. If an image sharing or video app contained an important feature, Facebook cloned it, thus paving the way for excluding a competitive rival from its Platform, while simultaneously taking away that rival's share of users.

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276. For example, when Snap, the maker of the app SnapChat, rejected Zuckerberg and Facebook's $3 billion offer to purchase the company and its product, Facebook flagrantly copied key features from Snap and built it into its Instagram product. Thus, when the SnapChat's "stories" feature—which allows a user to post a connected series of images and video—rapidly grew in popularity, Instagram simply cloned it. By late 2016, Instagram had launched a product that mooted one of Snapchat's most popular features.

277. Facebook's own clunky mobile app's clone of the "stories" feature did not have nearly the same traction with users. It was Instagram that provided Facebook the platform to compete head-on with a looming threat among social photo- and video-sharing apps. Without Instagram, Facebook would have faced direct competition. Instead, it leveraged Instagram to obtain and maintain its dominance among social mobile apps and the lucrative social data they generated.

278. Put simply, the acquisition of Instagram dramatically increased Facebook's market share of the Social Advertising Market and strengthened the DTBE protecting Facebook's business.

C. Facebook Acquires WhatsApp

279. In February 2009, Jan Koum and Brian Acton left Yahoo and founded a new company called WhatsApp. Koum had an idea for a mobile application that displayed user statuses in an address book on a smartphone—indicating, for example, whether a user was on a call, had low battery, or was at the gym. The pair enlisted the help of a Russian developer, Igor Solomennikov, to build the app. Koum spent days writing backend code for the app to allow it to sync with any phone number in the world.

280. Although the app—named WhatsApp—was initially unsuccessful, a June 2009 development changed everything. That month, Apple introduced "push notifications" for iPhone, allowing developers to ping app users even when they weren't using the app. Koum immediately updated WhatsApp to ping a user's entire network of friends when their status changed.

281. The feature eventually became a form of instant messaging. Because messages sent through WhatsApp instantaneously notified other users even if the phone was not running the app in the foreground, it became ideal for broadcasting messages to connections within a user's social network, which was built on their phone's contact list.

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282. At the time, WhatsApp's only significant competition for this sort of instant messaging was BlackBerry's BBM—which was exclusive to BlackBerry's proprietary hardware platform. WhatsApp, on the other hand, tapped into the vast network of app-enabled consumer smartphones that had emerged, particularly Apple's iPhone.

283. WhatsApp continued to innovate, including by introducing a double checkmark that showed when a message was read by another user. Wanting more from text messaging, including the limited MMS protocol used by cellular networks, WhatsApp set out to build a multimedia messenger system to send messages across a social network in real time to mobile devices.

284. Because WhatsApp's messaging used the mobile phone's Internet connection rather than text messages, the app allowed users to avoid text messaging fees entirely. In some countries, text messages through cellular providers were metered. WhatsApp's ability to send messages to any user with a phone using the Internet was its most sought-after feature.

285. In December 2009, WhatsApp updated its app for the iPhone to send photos. User growth spiked, even when WhatsApp charged users for its service. Having created a unique combination of image and messaging apps as one socially powered app, WhatsApp decided to stay a paid service and grew while generating revenue.

286. By early 2011, WhatsApp was one of the top twenty paid apps in Apple's U.S. App Store. The company attracted the attention of venture capital firm Sequoia, and WhatsApp agreed to take $8 million of additional funding in addition to its original $250,000 seed funding.

287. Two years later, in February 2013, WhatsApp's user base had ballooned to 200 million active users. That month, WhatsApp raised additional funds—another $50 million from Sequoia, at a valuation of $1.5 billion.

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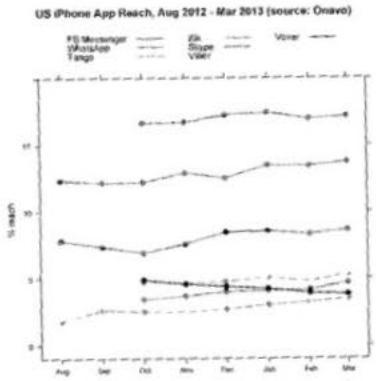
288. Internally, Facebook had carefully tracked WhatsApp's rapid rise. Engagement data from Facebook's Onavo spyware reported that WhatsApp was rivaling Facebook's own Messenger product and held third place in terms of user reach among mobile messenger apps for iPhone in the U.S as of April 2013.

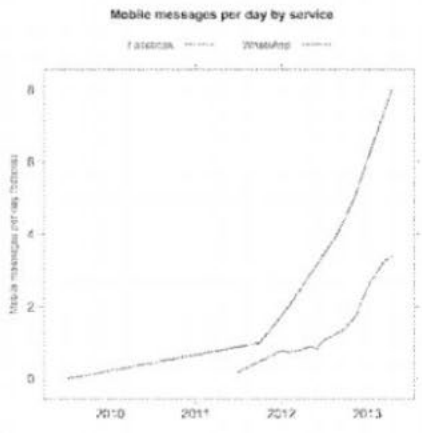
US mobile messenger apps (iPhone)



March % Reach	
Skype	17.1%
FB Messenger	13.7%
WhatsApp	8.6%
Viber	5.3%
Kik	4.7%
Voxer	3.8%
Tango	3.5%
GroupMe	2.4%
Line	1.4%
KakaoTalk	1.2%
MessageMe	0.5%

289. The broader picture was even more threatening to Facebook. As Buzzfeed reported, Onavo had tracked messages sent through WhatsApp and the number dwarfed Fakebook's own mobile product by more than twofold.

WhatsApp message sends



Message sends/day	
WhatsApp	8.2 billion
Facebook (mobile)	3.5 billion
Facebook (mobile + web)	11.5 billion

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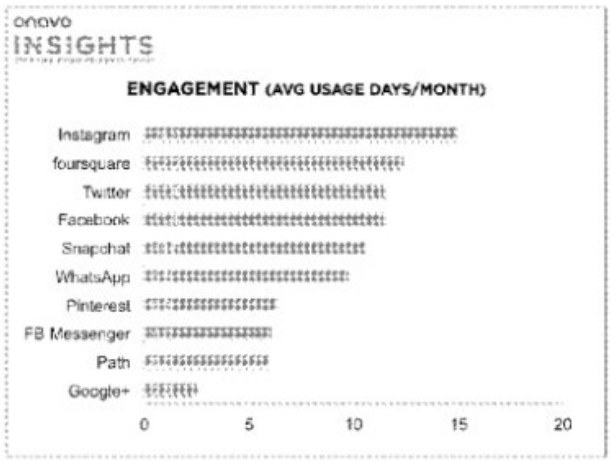
290. The same Onavo data reported by Buzzfeed showed massive engagement among WhatsApp users, placing it in sixth place behind Facebook's own core product; Facebook's newly acquired Instagram; Twitter; Foursquare; and Snapchat.

US mobile apps (iPhone only)



source: Onavo

291. WhatsApp, although lacking Facebook's market reach, was drawing from the same pool of limited attention. Given Facebook's own fledgling Messenger App, WhatsApp exposed a massive vulnerability in Facebook's business model. WhatsApp was built on a social network derived directly from a smartphone user's contact list. It did not require Facebook's graph network for growth and could not therefore be shut down by revoking access to Facebook's APIs. Nor could Facebook demand that WhatsApp enter into a Whitelist and Data Sharing agreement.

292. WhatsApp posed a direct threat to Facebook's business, including the DTBE protecting its dominance. WhatsApp allowed for statuses, image sharing, and texting—all of the principal features of Facebook's core products. By 2013, the size of WhatsApp's network and the user engagement in that network made WhatsApp the most direct threat to Facebook's market dominance—and because of Onavo, Facebook knew it.

293. To ensure that it maintained its DTBE, and thereby its dominance of the Social Advertising Market, Facebook sought to remove WhatsApp as a competitor. As the *Wall Street Journal* reported, Facebook's Vernal internally commented in 2013: "Whats App launching a competing platform is

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definitely something I'm super-paranoid about." Vernal understood that if WhatsApp created a rival platform, Facebook's own scheme to exclude rivals by leveraging its Platform would fail—developers would migrate to the competing platform provided by WhatsApp.

294. Internally, Facebook's management team discussed the WhatsApp threat with urgency. Facebook Director of Growth Javier Olivan wrote in an internal e-mail that WhatsApp had higher levels of reach and usage than Facebook in countries that it had penetrated. For example, based on Facebook's internal data, WhatsApp reached 99.9% of the smartphone population in Spain, or as Mr. Olivan described it, "literally everyone." By purchasing WhatsApp, Olivan suggested that they could "grow Facebook even further" by exposing new users to Facebook. Additionally, by bundling free services with WhatsApp and Facebook's other services, the transaction could serve as another mechanism to expand Facebook's reach among WhatsApp users. Zuckerberg responded, "I really agree with this analysis."

295. In an email to Facebook's CFO, David Ebersman, Olivan wrote that WhatsApp's "reach amongst smartphone users is actually bigger than ours . . . we have close to 100% overlap, our user-base being a subset of theirs." He explained that "in markets where they do well, they literally reach 100% of smartphone users—which is a big part of the population."

296. On December 13, 2013, Zuckerberg wrote to his management on competitive issues facing the company. WhatsApp was among them:

> I want to call out two competitive near term issues we face. The first is WhatsApp adding a feature like this for public figures . . . If the space is going to move this direction, being the leader and establishing the brand and network effects matters a lot. This alone should encourage us to consider this soon. . . . When the world shifts like this, being first is how you build a brand and network. We have an opportunity to do this at scale, but that opportunity won't last forever. I doubt we even have a year before WhatsApp starts moving in this direction.

297. Using Onavo data, Facebook's data scientists modeled WhatsApp's growth, particularly its engagement and reach, to determine whether it was "killing Facebook messenger," as well as how its usage trends compared to Snapchat.

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298. Knowing about WhatsApp's size, its engagement, and its unique potential to erode the DTBE protecting Facebook market dominance, Facebook moved aggressively to remove this existential threat from the competitive landscape. In late 2013, Facebook made an initial bid of $16 billion in stock for WhatsApp. During negotiations in early 2014, Facebook raised its price to $19.6 billion—adding $3.6 billion to the original price as compensation to WhatsApp employees for staying on board at Facebook. When all was said and done, Facebook ultimately paid close to $22 billion for WhatsApp.

299. But for the value of containing and shutting down the growth of WhatsApp's competing social network and platform, the transaction made no possible economic sense to Facebook. WhatsApp's revenues were a meager $10.2 million in 2013. Its six-month revenue for the first half of 2014 totaled $15.9 million, and the company had incurred a staggering net loss of $232 million in that same period. Facebook had paid twenty billion dollars—thousands of times WhatsApp's revenues—to acquire a money-losing company that created software functionality Facebook itself already had as part of its own products, and could easily build from scratch for a fraction of the cost of the acquisition if it wanted to.

300. At the time of the WhatsApp acquisition, Facebook's user reach and user base and engagement was already massive—and unrivaled by any competing messaging app—but the addition of WhatsApp's user base further solidified Facebook's dominance in the Social Advertising Market. More importantly, however, Facebook had removed a serious threat to its DTBE. If WhatsApp and its nascent social platform were allowed to compete on the merits, Facebook would not have been able to leverage its Platform into continued dominance of the Social Advertising Market, including by using API access to shut down competing third-party apps and to demanding access to other apps' most valuable social data as a condition for their existence.

301. Moreover, because the reach and engagement on WhatsApp generated (and generates) significant social data that Facebook could (and can) leverage and monetize through its mobile advertising channel, Facebook's DTBE strengthened as a result of the WhatsApp acquisition, fortifying Facebook's unrivaled dominance in the Social Advertising Market, and strengthening Facebook's ability to exclude potential entrants to this market from gaining a foothold with a rival messaging or photo-sharing app.

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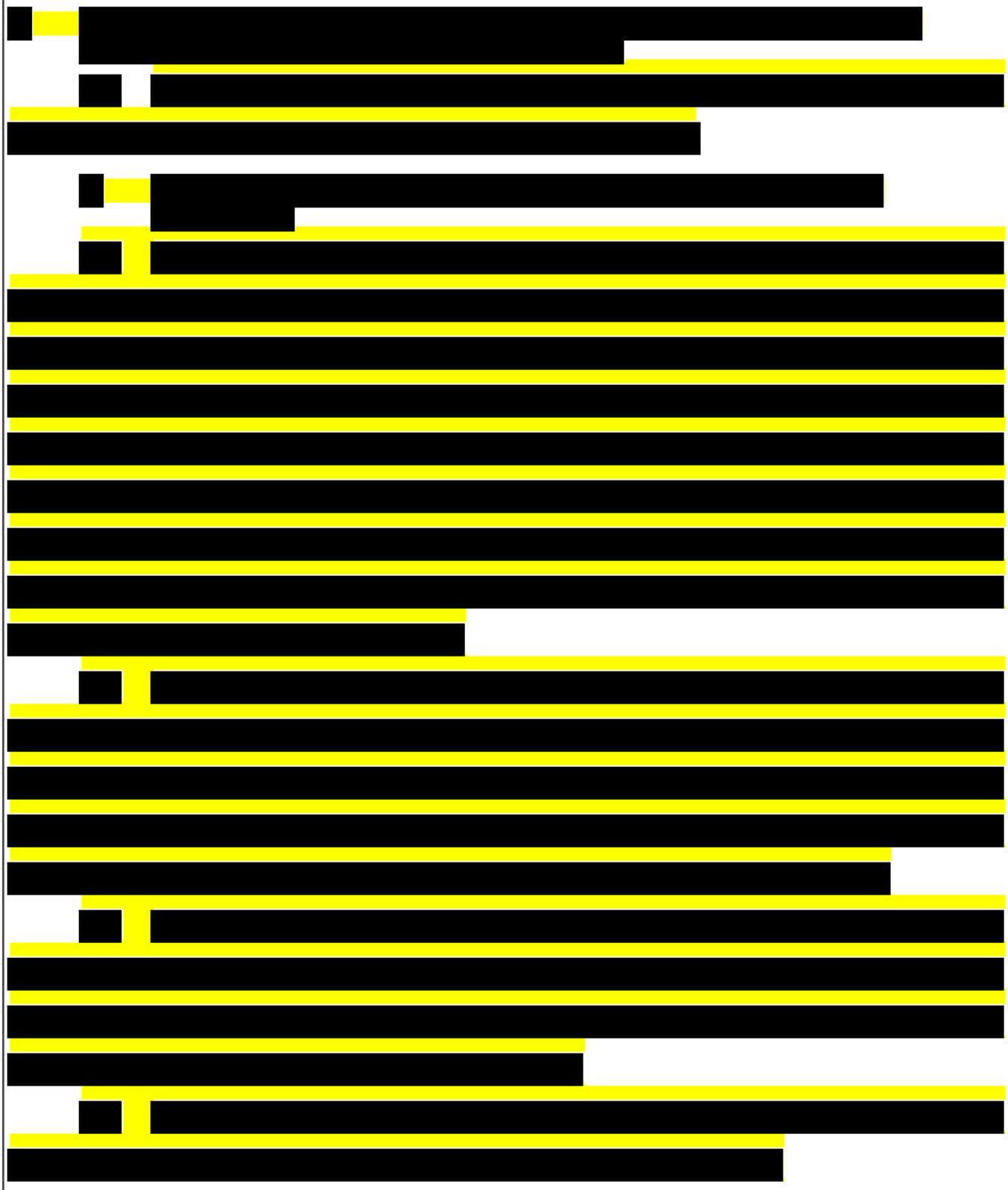

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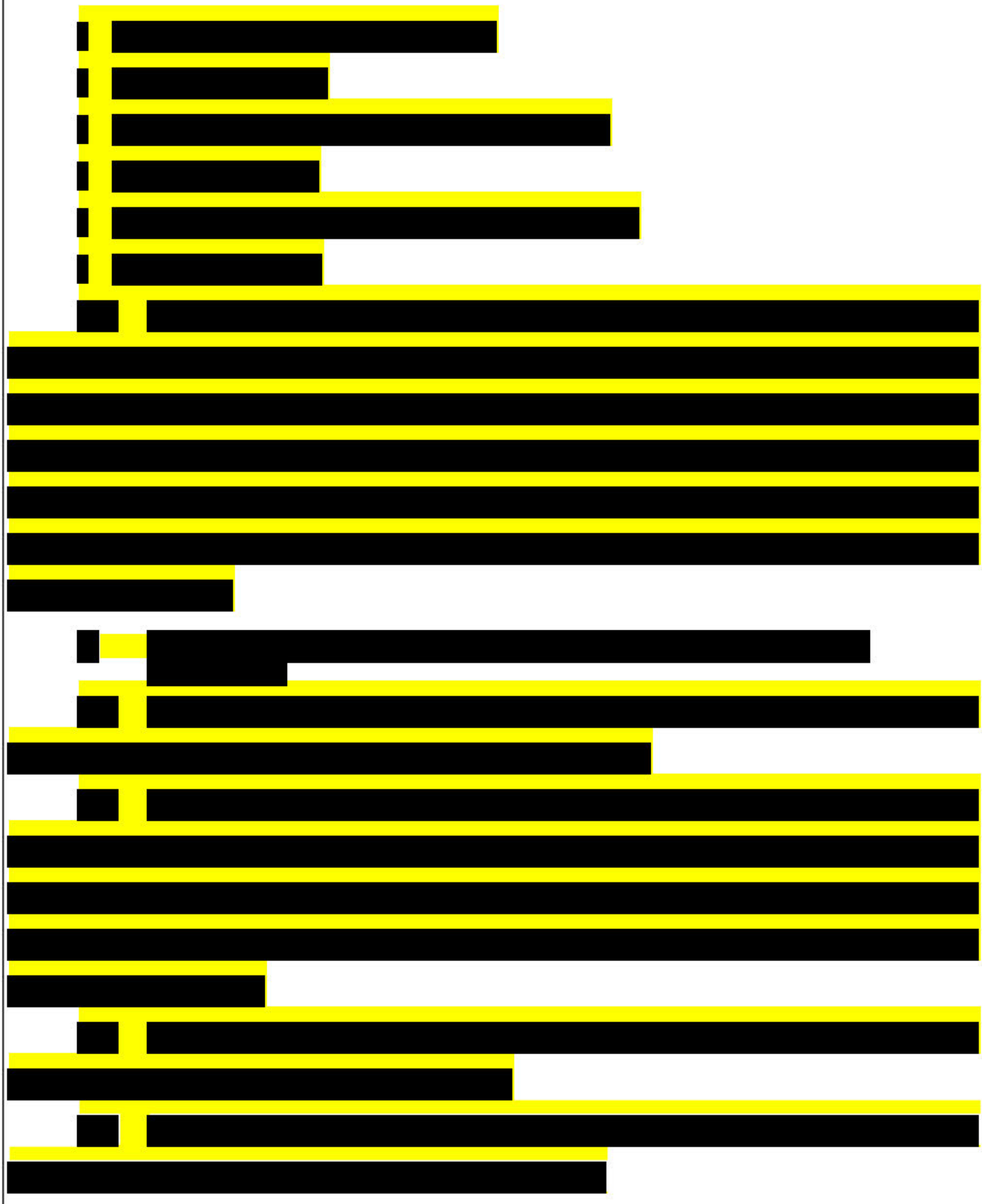

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A. The Aftermath of the Platform Change and the App Vacuum.

316. After Zuckerberg made his announcement at F8 in April 2014, Facebook continued to allow access to the Newsfeed and Friends APIs for another year. By the end of April 2015, however, Facebook had finally withdrawn general access to the APIs, destroying tens of thousands of third-party apps on its Platform.

317. Facebook quietly exempted certain developers from its decision, hand-selecting developers from whom Facebook could obtain particularly valuable targeting data; developers that made large ad purchases, especially on Facebook's new mobile ad platform, NEKO; and developers that met both criteria.

318. Notwithstanding these exemptions, Facebook's third-party app ecosystem had been decimated. Where thousands of apps previously performed various functions on Facebook's Platform, allowing Facebook to obtain data from a broad ecosystem of third-party apps for its ad targeting, those apps were now gone—and so was the advertising revenue and user engagement those apps generated.

319. Facebook itself was now the principal (and for many types of user data, only) source of user data from its social network—from within Facebook's walled garden. Outside developers could, for the most part, no longer query Facebook's most valuable Graph social data through the Facebook Platform. Rather, Graph data was only available to Facebook and those that it hand-selected for access.

320. Among the apps with high amounts of engagement, Facebook had purchased two of the most successful apps with the fastest growing user bases, WhatsApp and Instagram. Fakebook's core product also included Facebook's messaging app, Messenger. Facebook's control over these properties provided it with social data from important social networking vertical products and adjacent features—namely, mobile messaging and photo sharing.

321. With its Platform scuttled, Facebook would have to obtain engagement and social data from its own offerings, but Facebook lacked offerings in major categories, such as travel, e-commerce, streaming video, and location-based services. Facebook could no longer rely on third-party apps to obtain social data from user interactions in those spaces.

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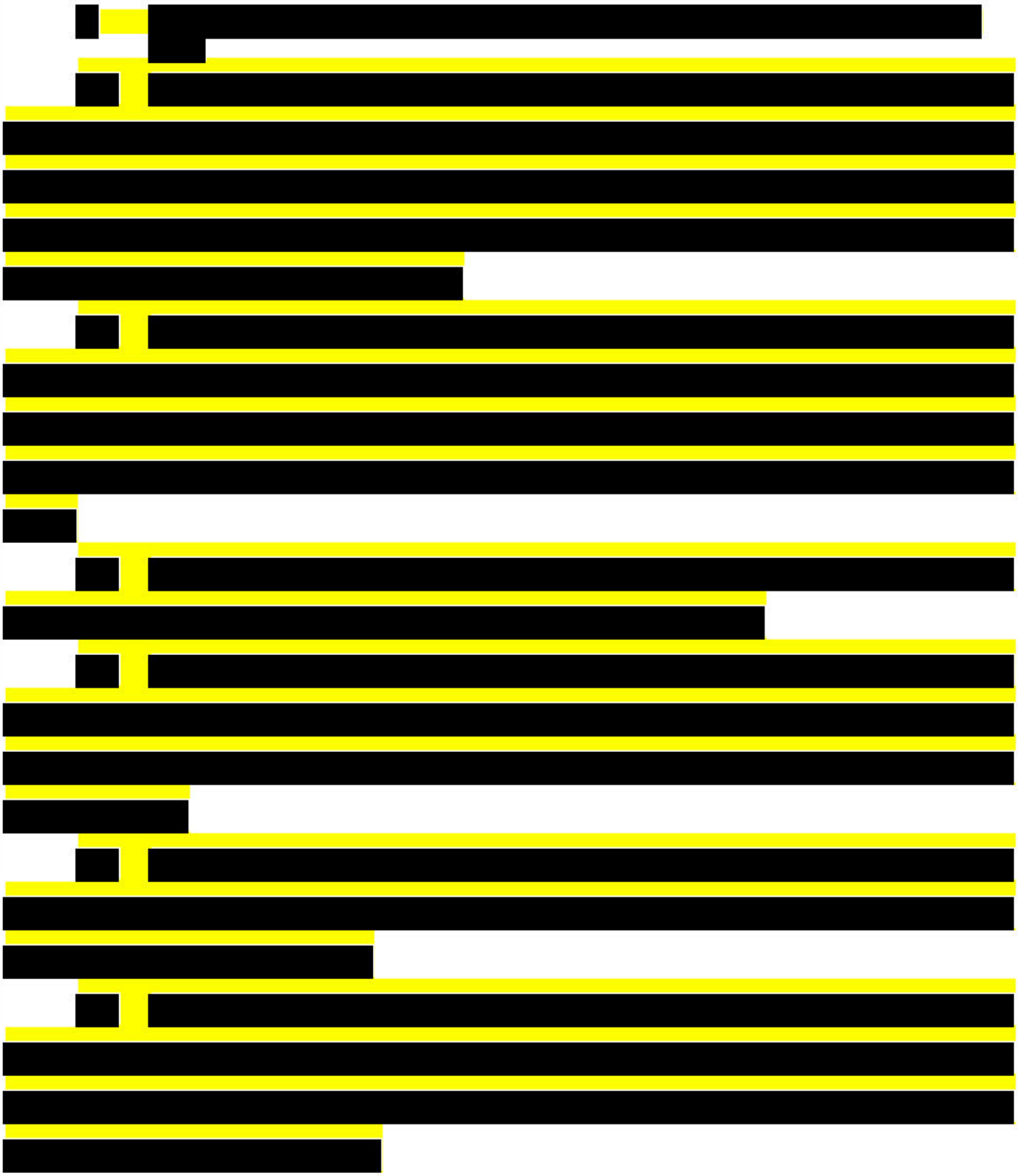
322. By April 2015, Facebook's priorities had accordingly shifted. It needed its own direct avenues of collecting user data from within its walled garden.



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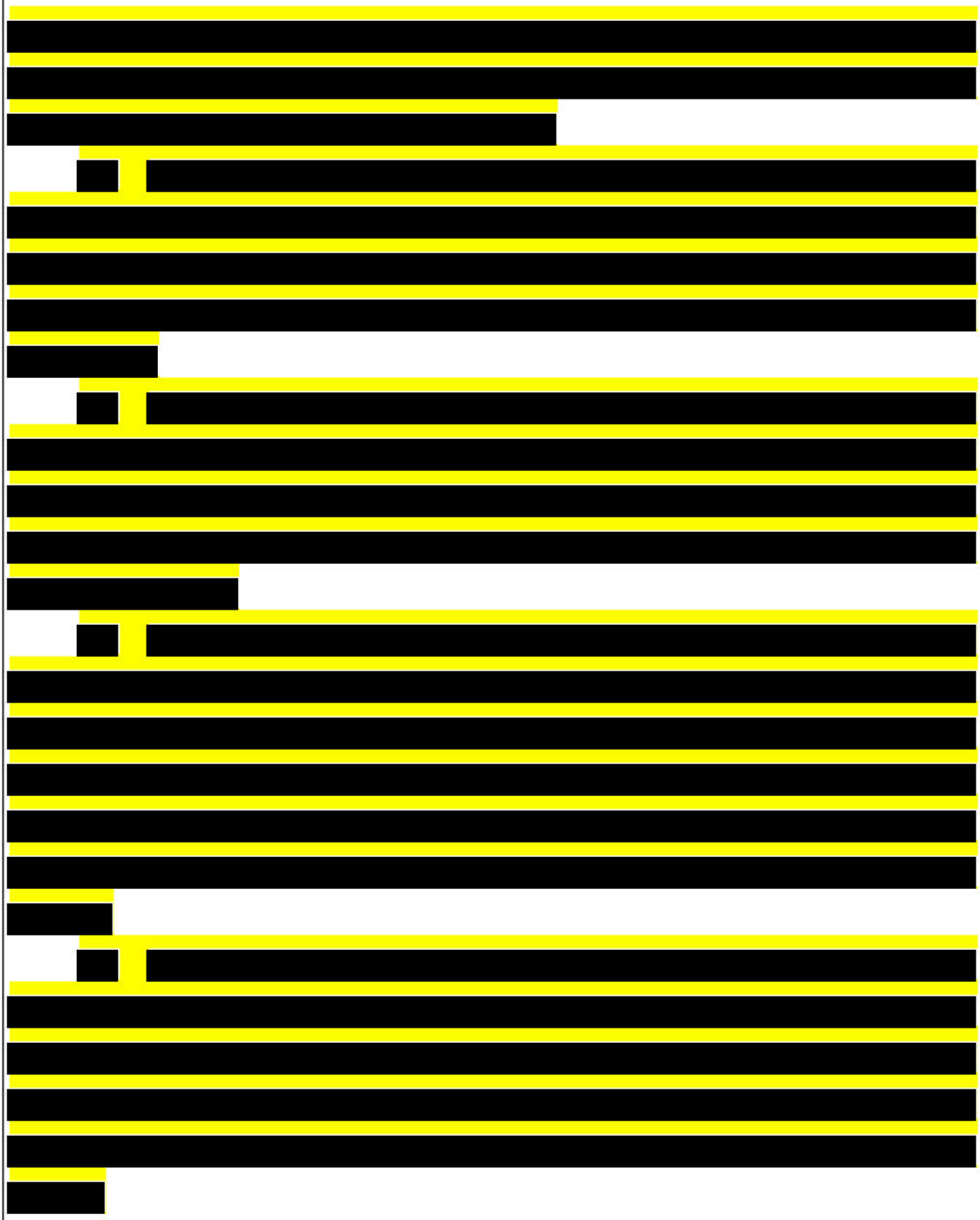

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354. Facebook launched Marketplace on October 3, 2016, with a focus mostly on customer-to-customer transactions. The initial product was to compete with sites like Craigslist, but Facebook expected to expand its product to encompass sales from businesses. TechCrunch reported on Marketplace the same day as its launch, heralding the new functionality:

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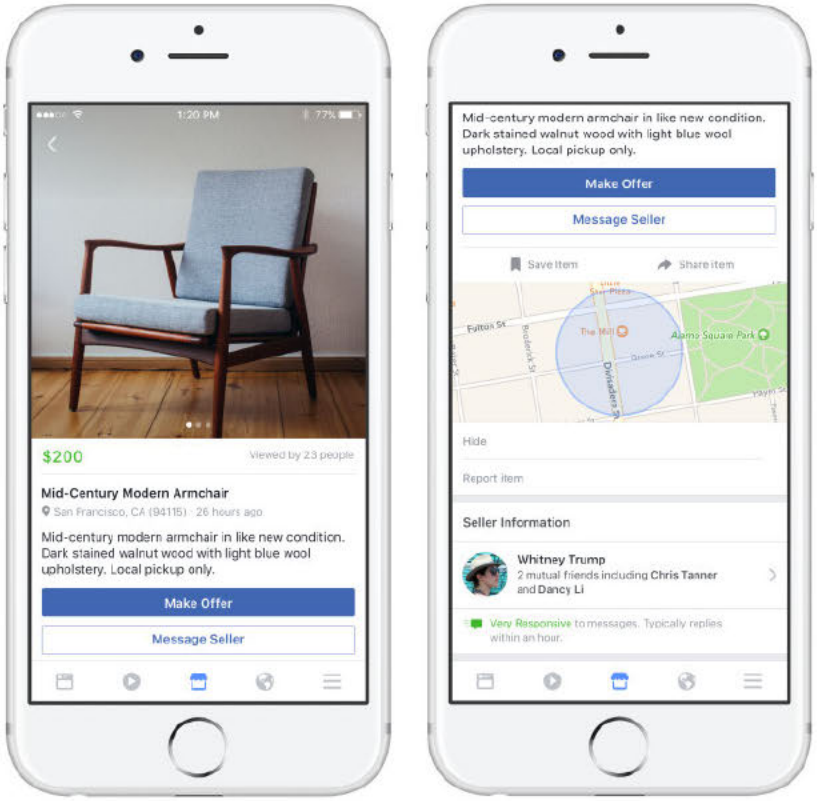
> Facebook Marketplace lets you browse a relevancy-sorted feed of things to buy from people who live nearby, and quickly list your own stuff for sale. Integration with Facebook Messenger lets you haggle or arrange a meet-up, and you know more about who you're dealing with than on anonymous sites like Craigslist thanks to Facebook's profiles.

355. Facebook's Marketplace was launched as the central feature on Facebook's mobile product in 2016. In fact, Facebook placed an icon for Marketplace at the center of its mobile app's navigation bar.



356. TechCrunch noticed the prominence of the new feature. It was clear to the news outlet that Facebook was making a large bet on Marketplace:

> Facebook is betting big on Marketplace, considering it's taking over a main spot in the navigation tab bar, replacing the Messenger shortcut in Facebook for iOS. That prime location could make Marketplace the digital version of impulse buys at the checkout counter.

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D. Facebook Moves into Location-Based Services

365. By the end of 2015, Facebook faced nascent competition from a growing location-based social network, Foursquare. Foursquare had expanded the concept of the social network to the physical world, allowing its users to "check in" at various locations, notifying friends of their whereabouts.

366. In July 2014, Foursquare had split itself into two apps—Swarm and Foursquare. Swarm would focus on location-based messaging, while the Foursquare app would focus on local recommendations based on a user's location. Both apps threatened to make inroads on Facebook's social networking business through innovations in location-based services.

367. Foursquare had laboriously developed the data required for its location-based social network, including information about places of interest, restaurants, shops, and other places frequented by its users. Foursquare provided this information to third-party integrators and apps through the Foursquare API. TechCrunch described Foursquare's data, API, and network of integrators in a May 5, 2015, article:

> Places by Foursquare, meanwhile, is the company's repository of Places, a database of about 65 million points of interest that the company says can be used as an end-to-end location solution. This is the database that is built

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> out not just through the network of developers who use Foursquare's API—which includes companies like Citymaps, Microsoft and Garmin—but also through Foursquare's own apps.

368. Foursquare's database of Places gave it a running start against Facebook in the rapidly-developing location-based services sub-vertical, and the company had aggressively built a competing social network using that head start. In December 2015, Foursquare raised an additional round of funding based on the premise that the data it had gathered was uniquely valuable.

369. But worse for Facebook than simply Foursquare's nascent social network was the company's rich trove and pipeline of real-time socialized location data. Such data—which could potentially be used to powerfully target social advertisements in the right hands—was imminently licensable from Foursquare through its API, and this posed a significant potential threat to Facebook's Social Advertising monopoly. If Foursquare's real-time location data repository and pipeline were provided to a potential entrant at scale in Social Advertising—or Foursquare itself grew its Social Advertising products with a valuable location-based data trove while Facebook was itself still preparing for meaningful entry into location-based services, this could significantly erode the DTBE, as location-based targeting and inferences and signals relating to location were on the verge of becoming perhaps the most valuable targeting signals for social advertising.

[redacted] Unfortunately, Foursquare [redacted]

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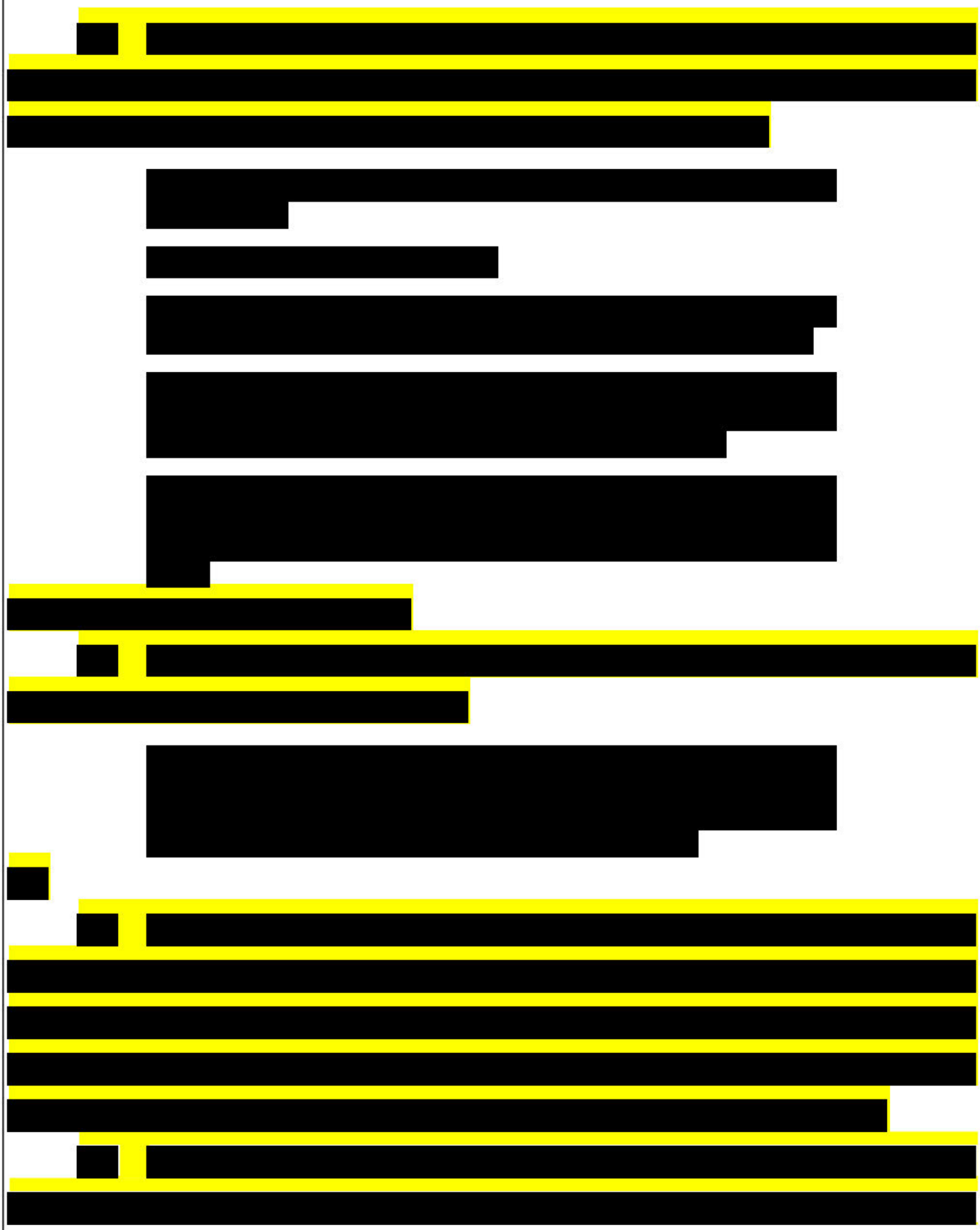

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E. Streaming Video and Facebook Watch

379. Another potential source of user social data that could be mined for ad-powering targeting information was streaming video. By 2016, Facebook had included a video tab in its mobile product, but long-form and episodic videos were taking hold in the market—and formed a particularly rich source of potential social data targeting.

380. In 2017, Netflix was the pre-eminent streaming service that specialized in long-form television and movie content. Netflix's streaming service had grown significantly, from approximately $8.8 billion in revenue in 2016 to $11.6 billion in revenue in 2017.

381. Netflix was also a powerful source of user data. The movies, TV shows, clips, sports, and episodic videos its users watched and interacted with shed light on their interests, as well as their likely purchasing decisions.

382. At the heart of Netflix's service was its recommendation algorithms. Netflix's recommendation algorithm tailored content to particular users. As the Wall Street Journal explained in a November 10, 2018 article: "Analytics is deeply embedded in Netflix's DNA. The company mines reams of data on its subscribers' tastes to help determine which shows to bet on and how to promote them." Moreover, Netflix uses powerful AI and ML models to determine which shows and movies to license and what original programming to create.

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388. Watch allowed video to be tailored to individual users, including based on their network of friends and their habits. Facebook also curated video to users based on what others on its network were watching. As TechCrunch explained in an article dated the same day as Watch's launch:

> Watch features personalized recommendations of live and recorded shows to watch, plus categories like "Most Talked About," "What's Making People Laugh" and "Shows Your Friends Are Watching." Publishers can also share their shows to the News Feed to help people discover them. A Watchlist feature lets you subscribe to updates on new episodes of your favorite shows. Fans can connect with each other and creators through a new feature that links shows to Groups.

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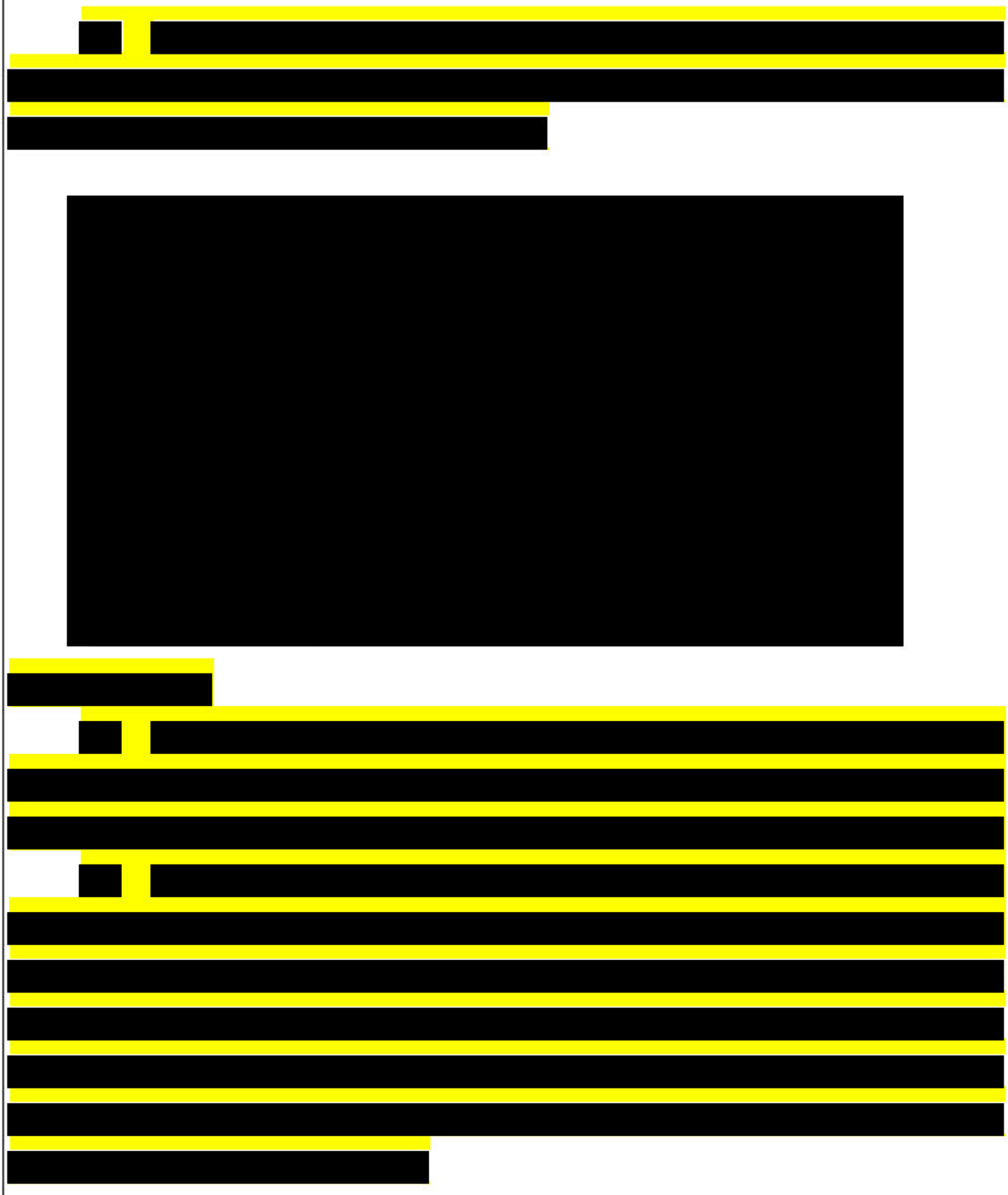

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VII. FACEBOOK'S ENTRY AND DATA CAPTURE CONDUCT

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394. Facebook's business has long relied on selling advertising targeting users that interact with its properties, including Instagram, WhatsApp, Messenger, and its core Facebook product. As users actually interact with these products—*e.g.*, a user browses Instagram; chats via WhatsApp or Messenger; or navigates Facebook's website or mobile app—their identities are readily ascertainable by Facebook. These users are logged in to Facebook, and their every move tracked, logged, and converted into structured social data to be mined by Facebook's ML and AI systems.

[redacted] By 2015, Facebook's users were using smartphones and web applications to perform time- and attention-consuming activities that Facebook had not made part of its owned-and-controlled product. Worse still, after the (pre-planned) demise of Facebook's open Platform in early 2015, [redacted]

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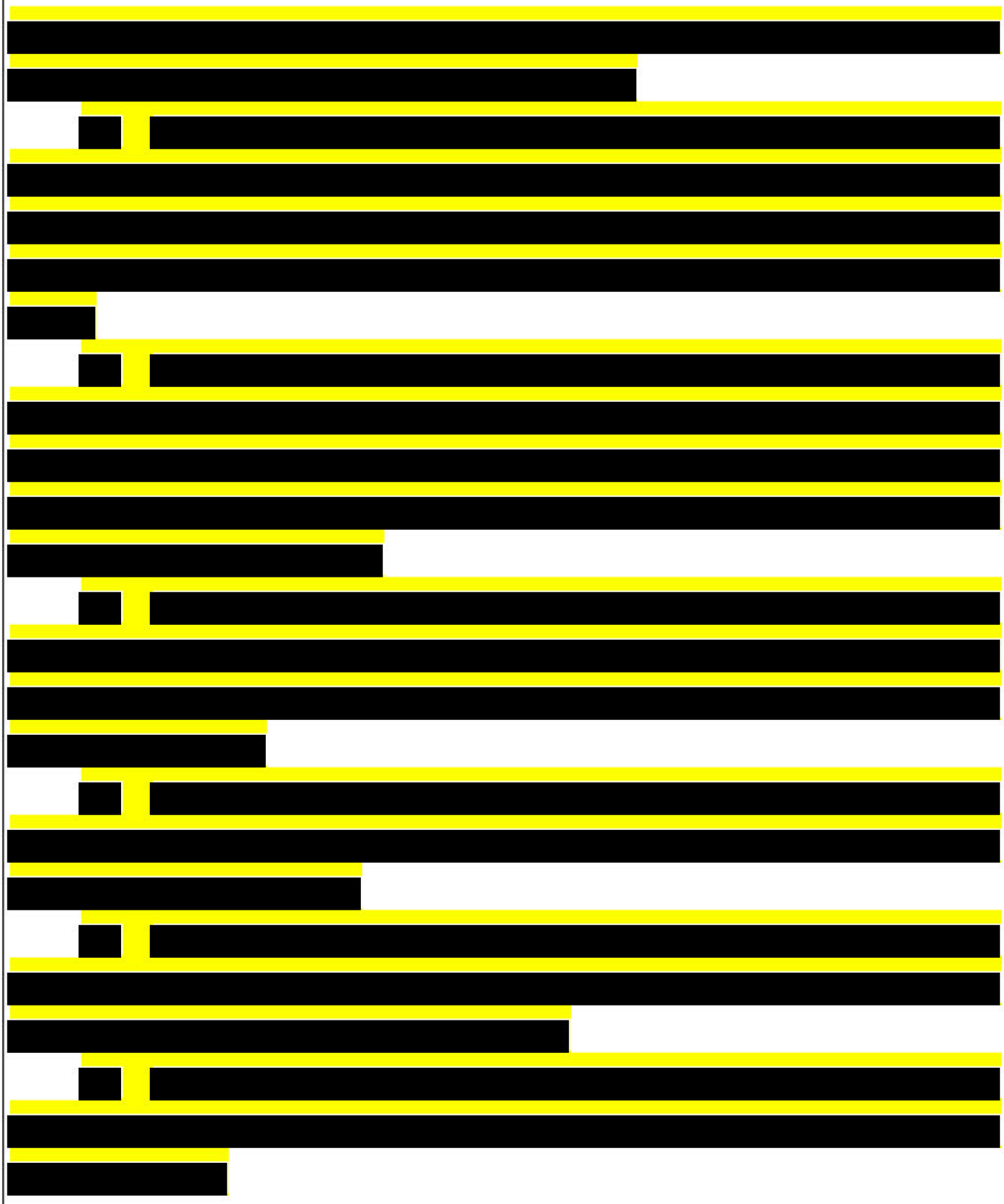

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418. From 2015 to 2016, Facebook was in increasing competition with nascent social network Foursquare. Foursquare's competitive edge—[redacted]—was its laboriously created database and data stream of location data, including its users' real-time location social data.

419. Facebook moved directly into Foursquare's location-based corner of social networking beginning in earnest on January 29, 2015, when it announced its own "Place Tips" product, directly competing with Foursquare's location-based recommendation engine.

420. Facebook expanded further into Foursquare's territory in 2016 and 2017, putting further pressure on Foursquare—which was rapidly raising capital to compete with Facebook.

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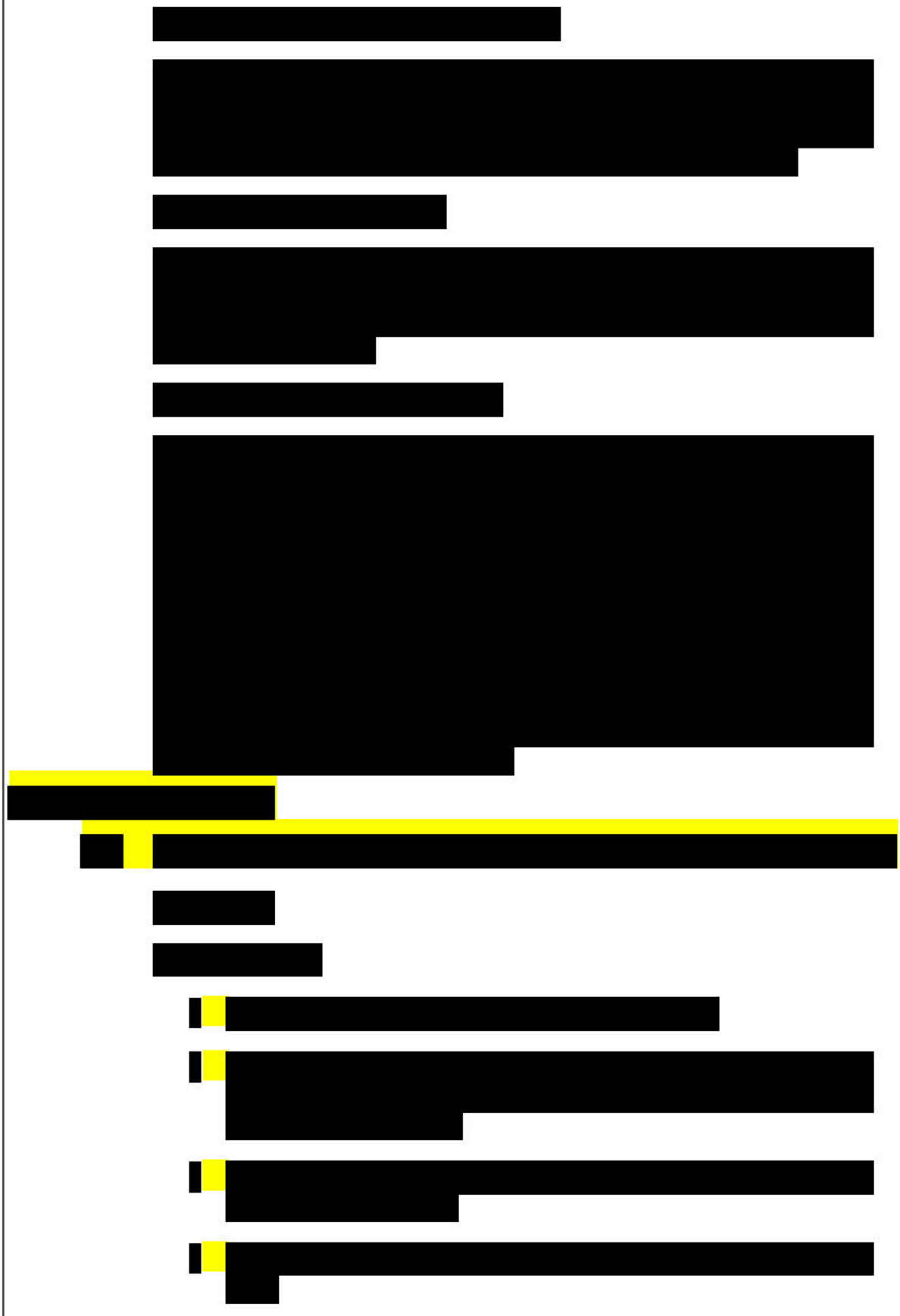

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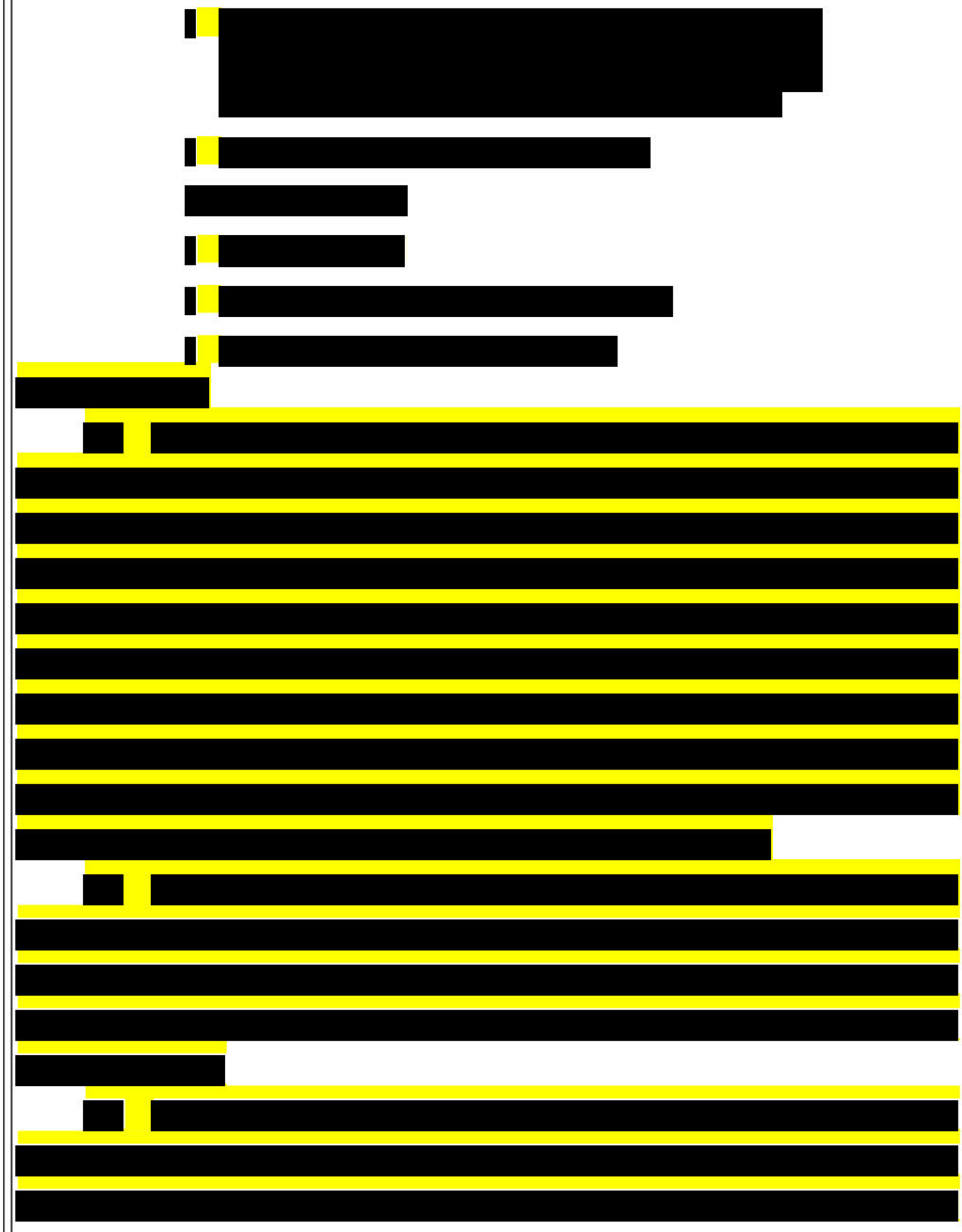

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Stephanie, I think you should circulate the proposed term sheet to Dan

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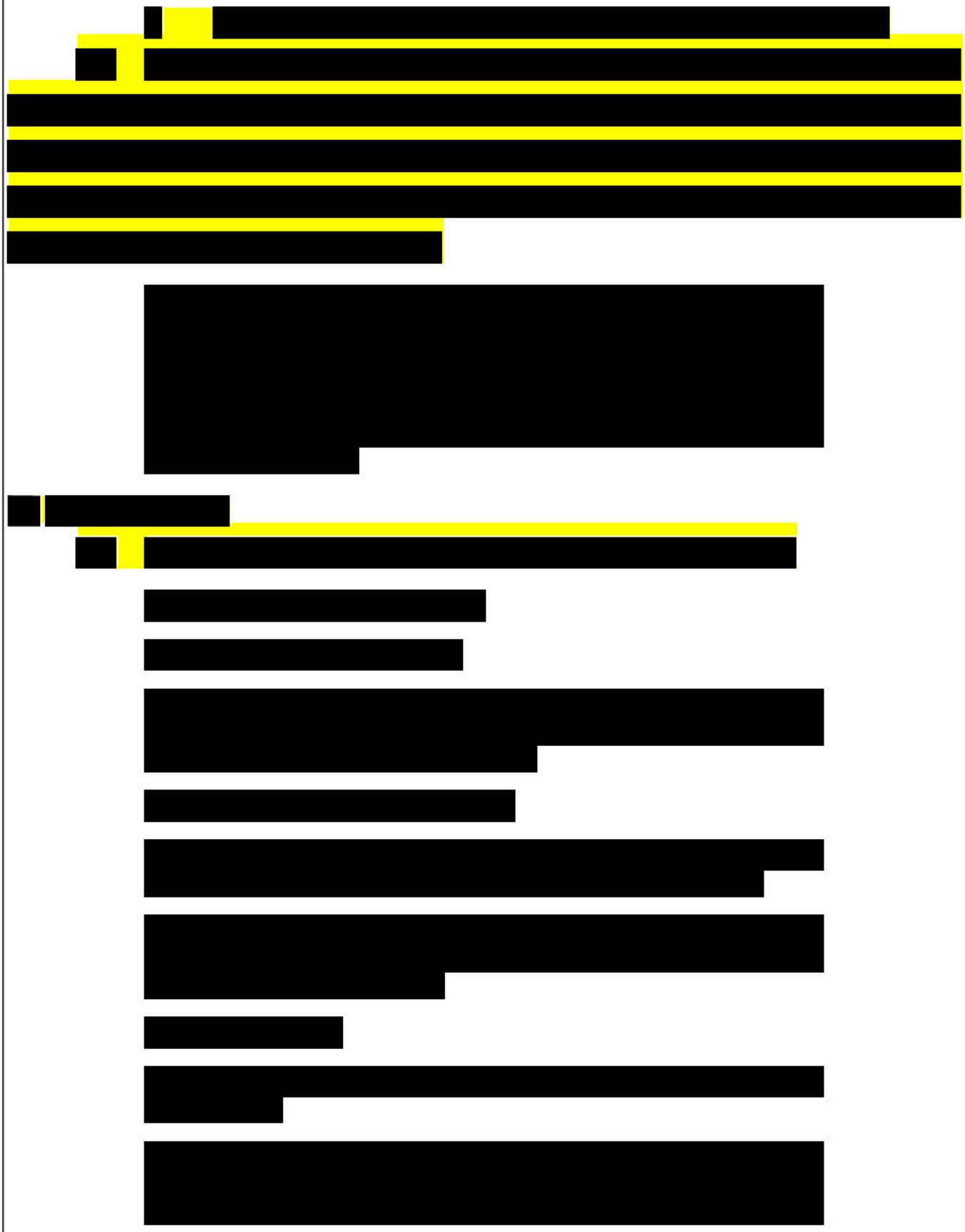

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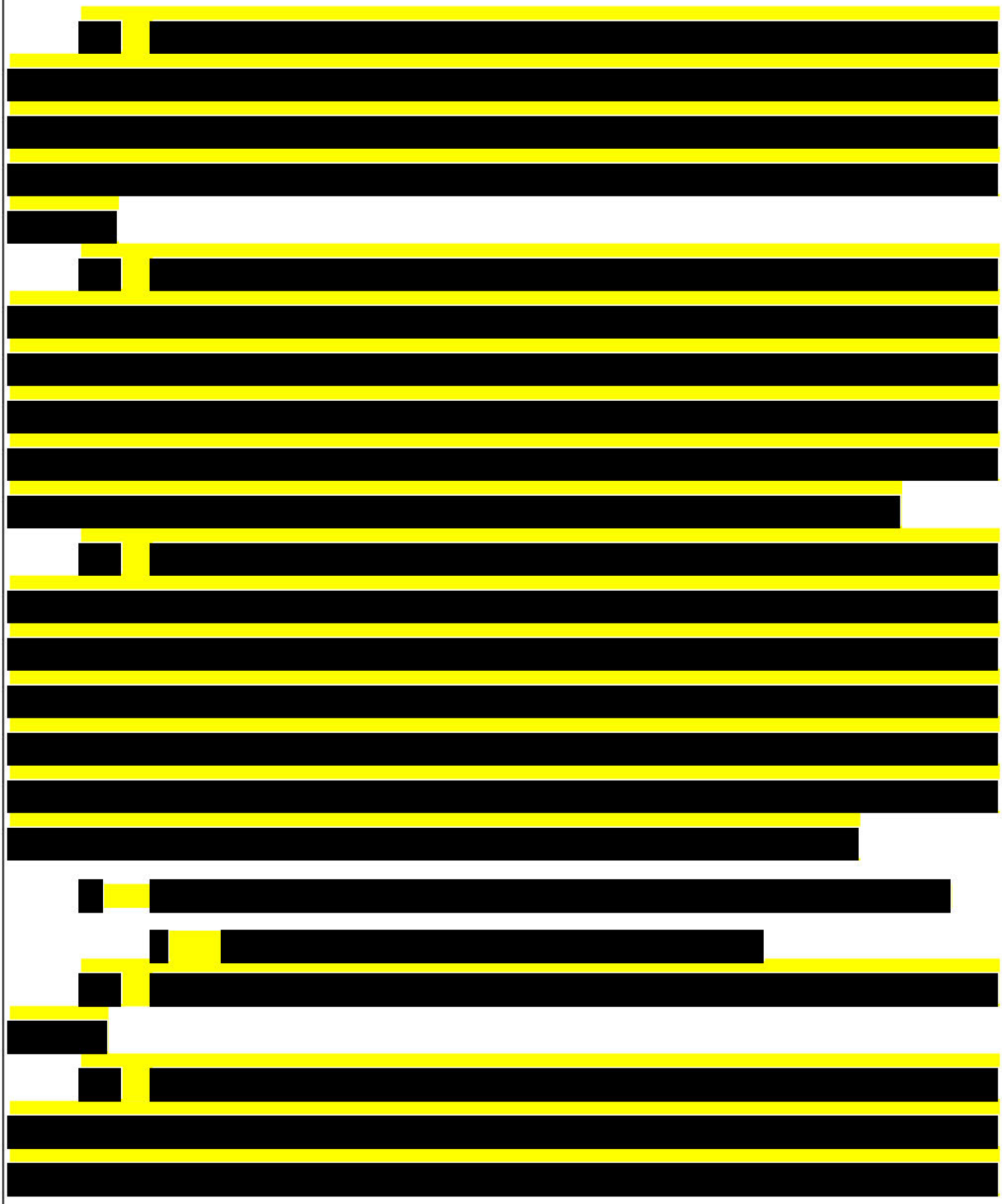

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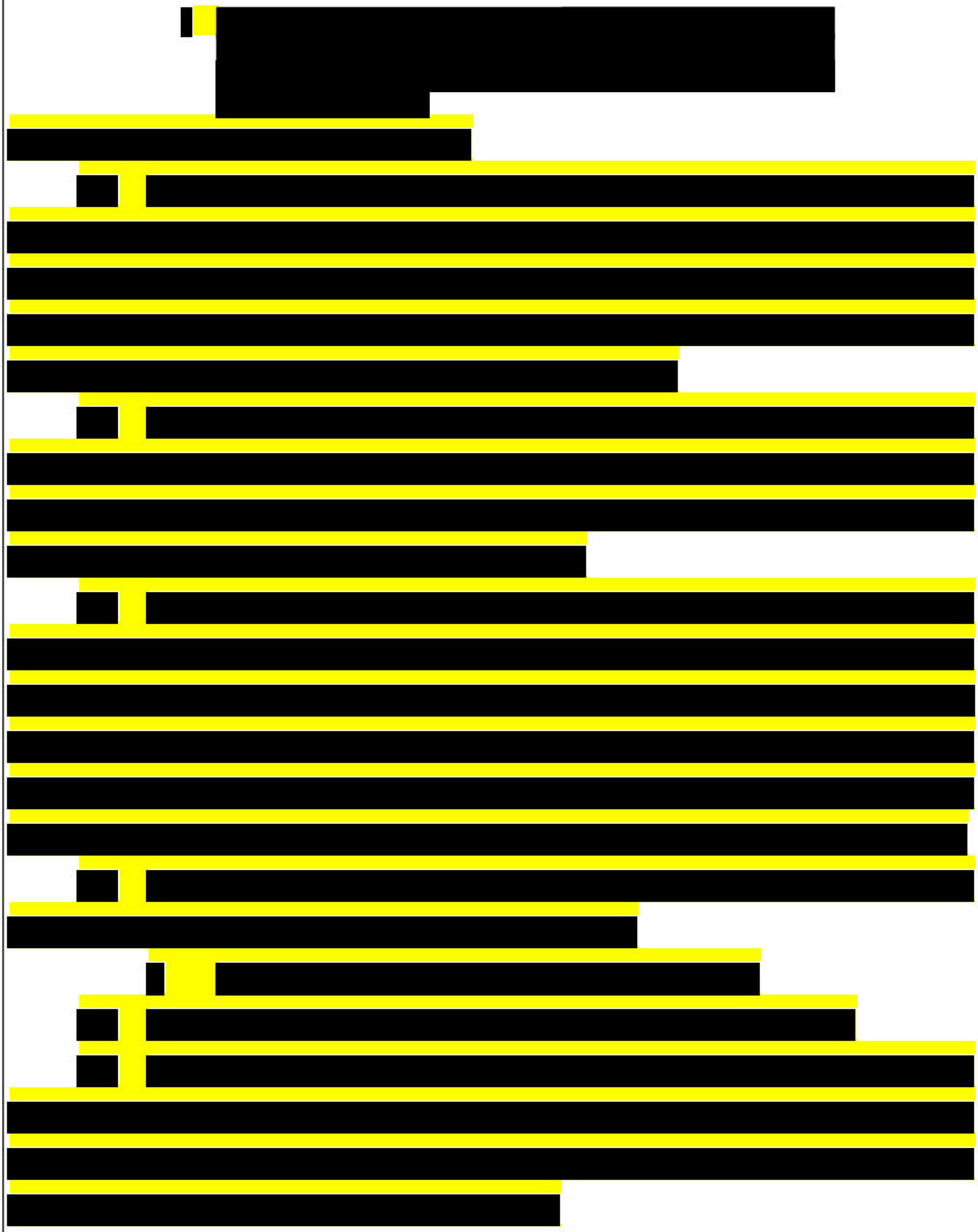

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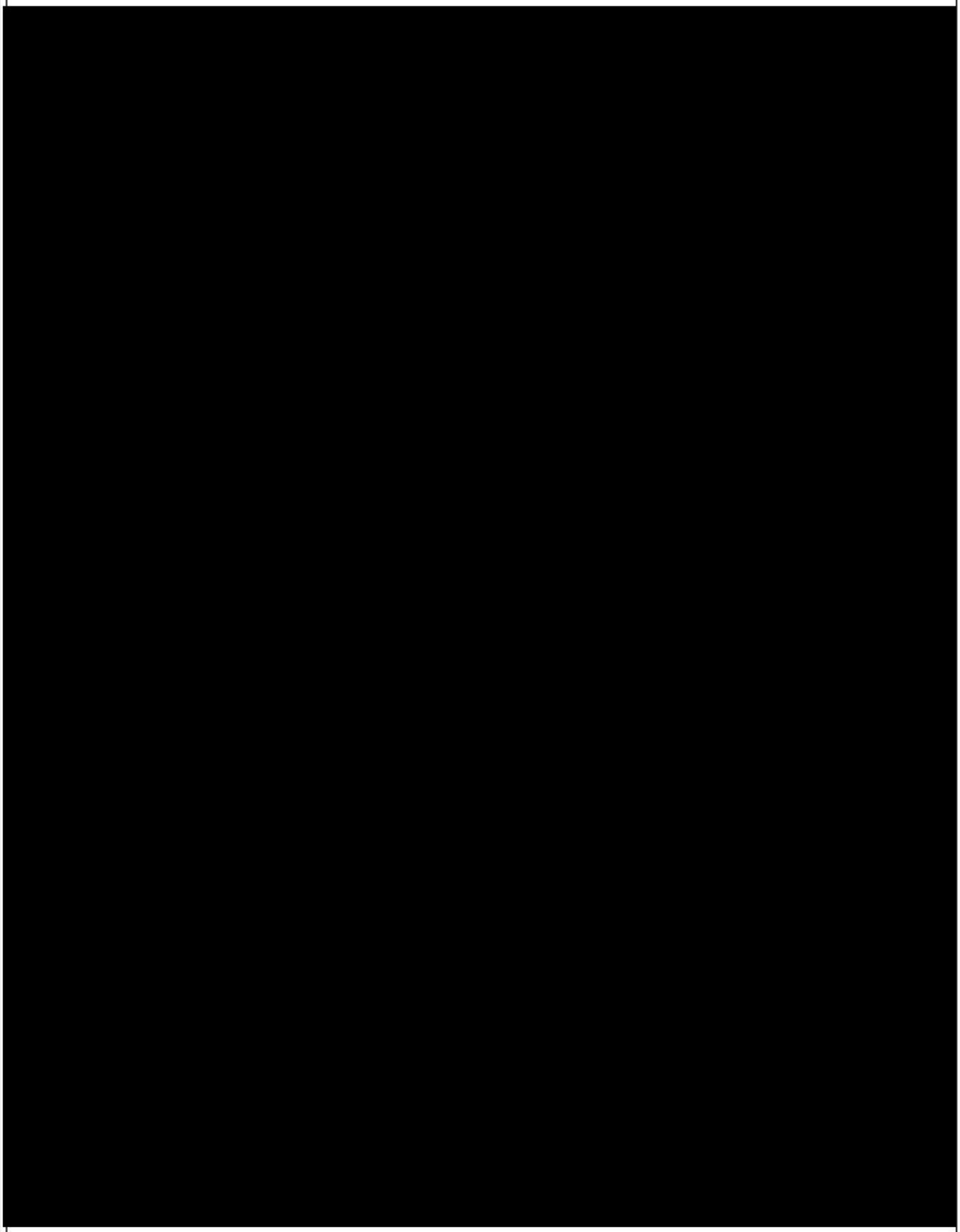

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526. In December 2018, Facebook cut the funding for its news shows on watch. In February 2019, Facebook announced that it would not be renewing most of its news programs. As *Digiday* reported on February 26, 2019:

> Last June, Facebook rolled out its first set of daily and weekly news shows from publishers such as ABC News, CNN, Business Insider and NowThis. Overall, Facebook has launched 21 news shows on Watch including CNN's "Anderson Cooper Full Circle," BuzzFeed's "Profile" and Univision 's "real America with Jorge Ramos."
>
> In recent months, Facebook has been telling news publishers that it will only renew about a third of the existing news shows that it has funded for Facebook Watch, according to publishing sources that have met with Facebook.

527. Facebook also began cutting its original content, particularly its scripted series. In January 16, 2020, Facebook cut popular shows *Sorry for Your Loss* which starred Elizabeth Olsen, and *Limetown* which was headlined by Jessica Biel.

528. By early 2020, Facebook had publicly canceled virtually every drama on its platform, including *SKAM Austin*, *Five Points*, *Sacred Lies*, *Turnt*, *The Birch*, and *Steroscope*. Facebook also cut its comedies, *Strangers* and *Queen America*. Facebook cut its docuseries, including *Humans of New York:*

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The Series, *Bill Murray & Brian Doyle-Murray's Extra Innings*, *Tom vs. Time*, *Fly Guys*, *Behind the Wall: Bubba Wallace*, and *Inside the Madness: Kentucky Basketball*.

529. Facebook cut its game shows, *Confetti* and *Outside Your Bubble*. Facebook also cut its animation series, *Human Kind of*, *Liverspots and Astronots*, and *Human Discoveries*. Facebook cut almost ever reality show, including *No Script with Marshawn Lynch*, *Relationshipped*, *Backourt: Wade*, *The Tattoo Shop*, *Bear Grylls: Face of the Wild*, *Help Us Get Married*, *Huda Boss*, *Sneaker Hustle*, *Troy the Magician*, *You Kiddin' Me*, *Big Chicken Shaq*, *Double Take*, and *Will Smith's Bucket List*.

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[redacted]

536. On April 12, 2019—[redacted]—Facebook announced that Reed Hastings would be leaving Facebook's Board of Directors.

FACEBOOK ANTICOMPETITIVELY USED ONAVO DATA TO BUILD A MASSIVE, [redacted] SURVEILLANCE SYSTEM AND TO SPY ON FACEBOOK USERS

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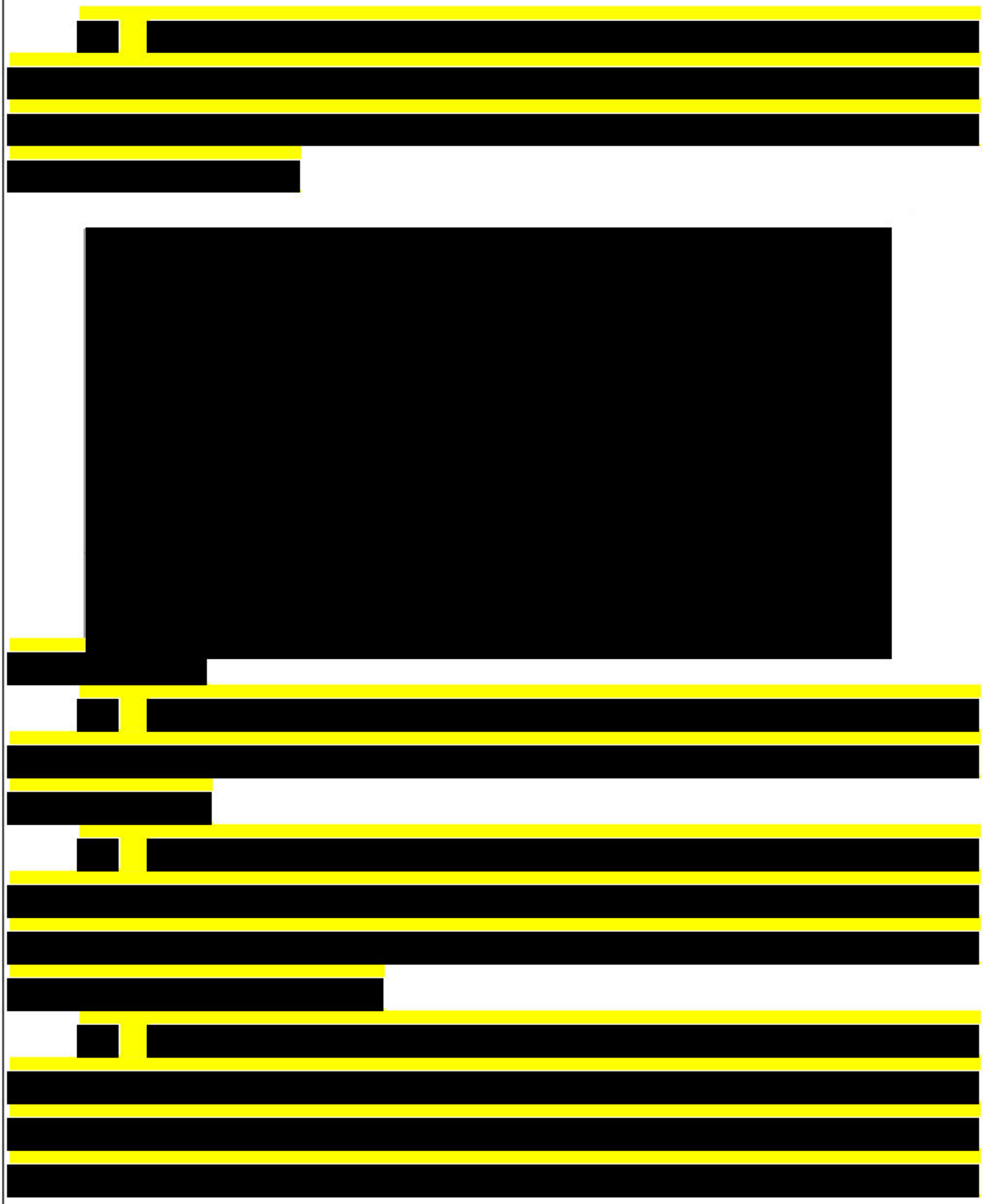

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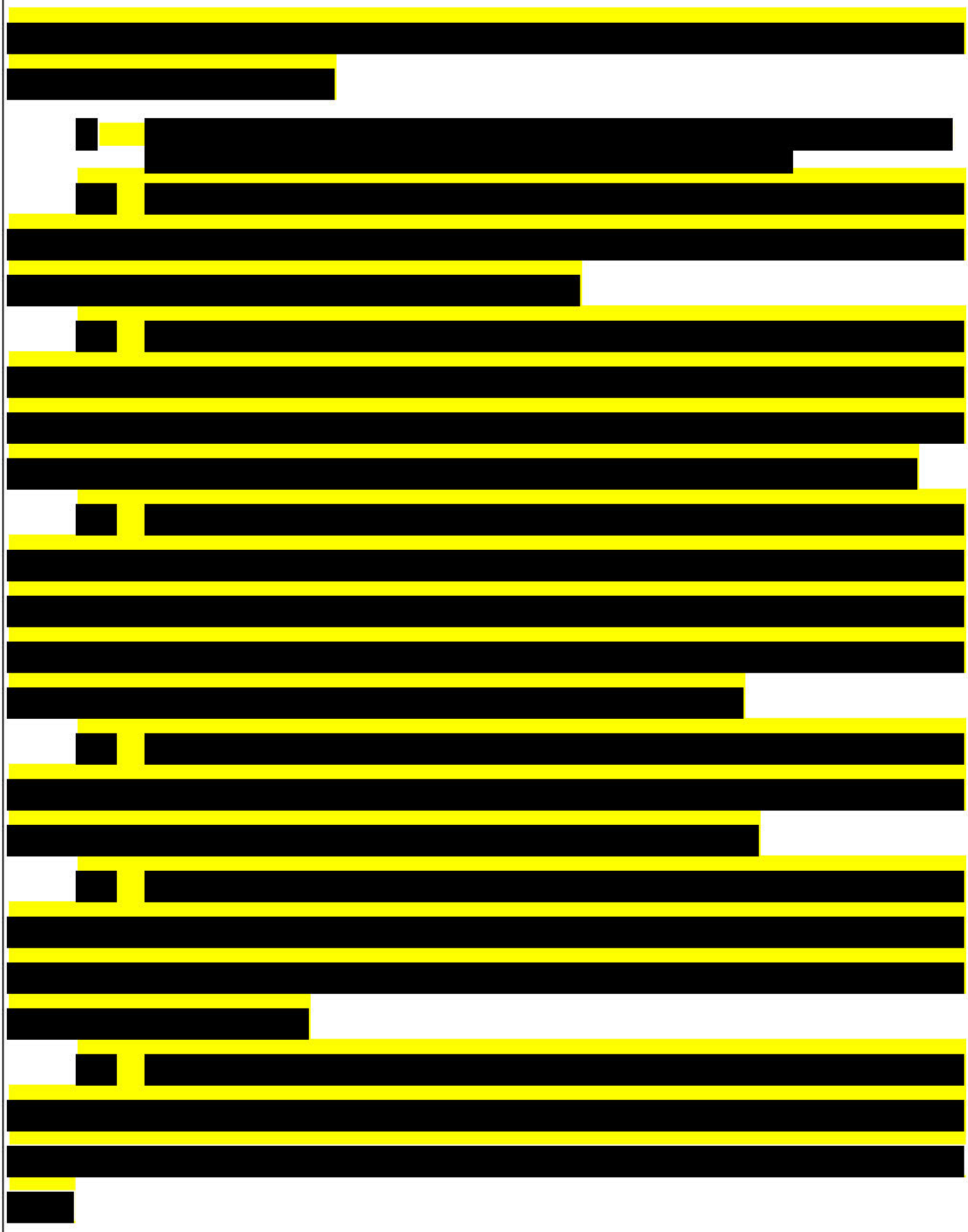

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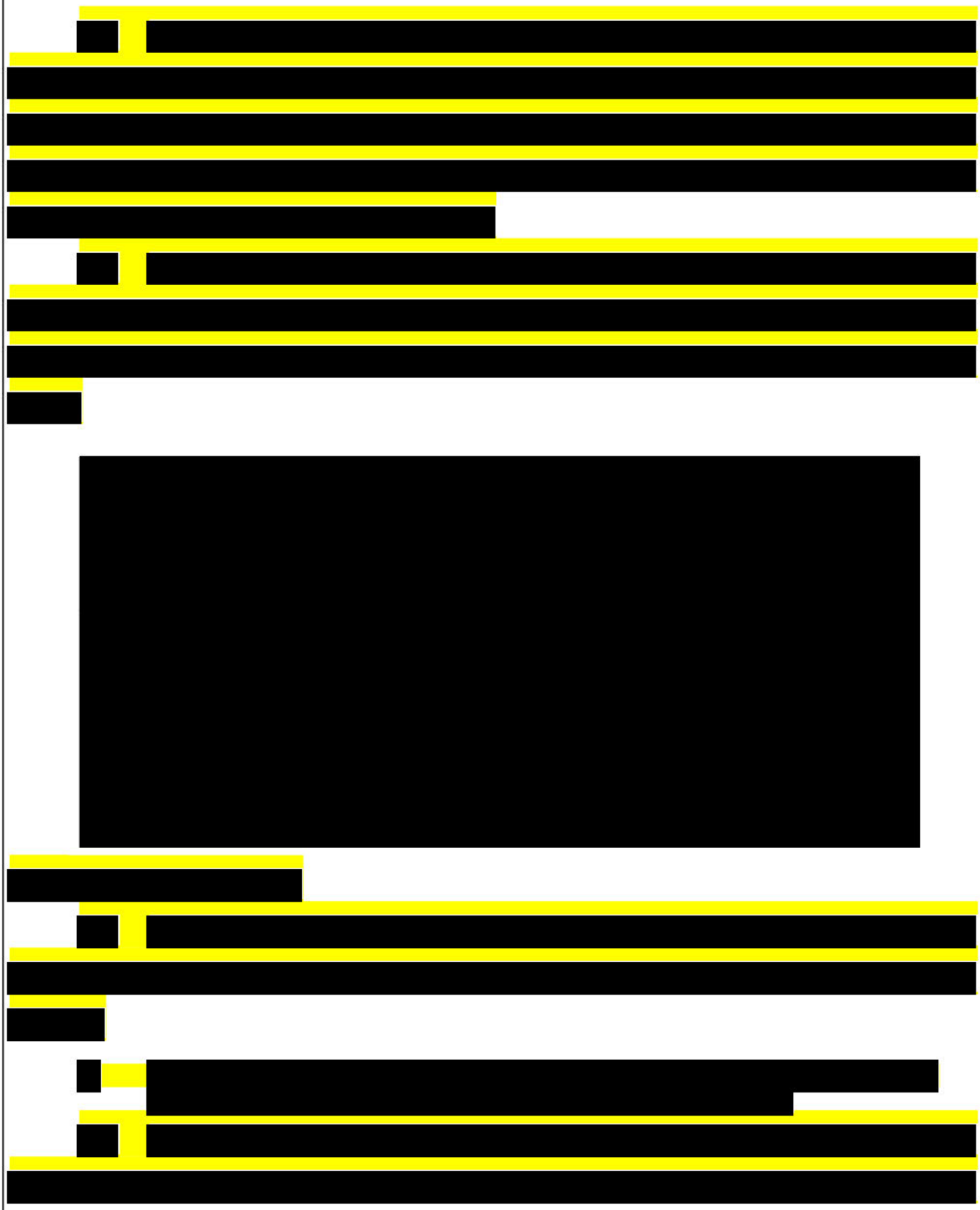

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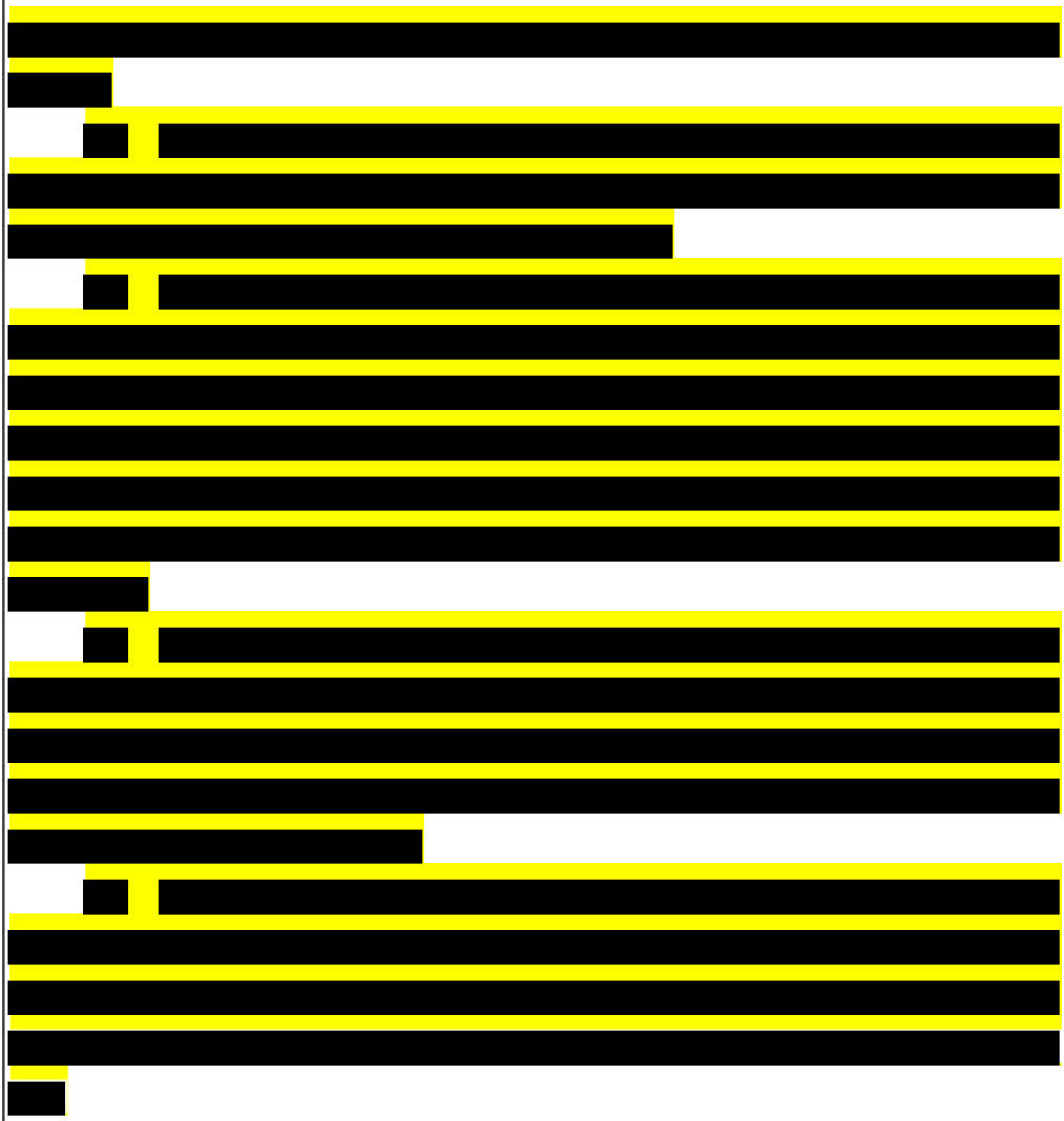

569. This gave Facebook an immense advantage over competitors. While competing apps would have to obtain user data from their own apps, Facebook was able to capture user data from third-party apps in addition to its own. This directly strengthened Facebook's ability to target users for content and advertising, and it gave Facebook a real time view of potential competitive threats as well as the information and time Facebook's own users contributed to those threatening apps. This contributed to

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and fortified the DTBE, helping maintaining Facebook's Social Advertising monopoly and injuring Plaintiffs and the proposed classes.

IX. THE THREAT BEYOND FACEBOOK'S WALLED GARDEN

570. To maintain its dominant position in Social Advertising, Facebook would have to ensure its ability to granularly target Facebook users. But because those users spent significant time outside of Facebook, including on mobile apps and web applications, Facebook needed to effectively harvest social data from them even when they were not on Facebook. And, to maintain the competitive edge it enjoyed from its DTBE, Facebook would have to extend its ability to target users outside of its walled garden.

A. Facebook Audience Network

571. Facebook announced a new advertising system at the 2014 F8 conference in April of 2014 called the Facebook Audience Network ("FAN"). FAN allowed developers to target both standard banners and custom ad units using Facebook's vast trove of personal data. Advertisers would be able to buy ad space in mobile applications through FAN, and developers could purportedly monetize their apps.

572. As TechCrunch reported ahead of the F8 announcement, FAN would allow advertisers to use Facebook's granular targeting system to advertise in mobile applications:

> Facebook will also bring the ad targeting muscle, allowing advertisers to reach people based on biographical and interest data, and likely with cookie-based retargeting, too. Most other ad networks have a limited amount of data regarding who someone is, and that data is often inferred so it's not always accurate. That makes it tougher meaning to show relevant ads that get results and command high rates for publishers. *[sic]*
>
> But Facebook's social network has convinced people to volunteer tons of deep personal information like work history, education, and favorite movies, plus it can see what apps they use and where they are. Since people stay logged into Facebook, FAN can recognize exactly who the viewer is and show them an ad matched to their profile.

573. Part of Facebook's focus was on developers, as they were Facebook's largest mobile ad customer because they sought new users through app installs. FAN would provide new forms of advertising, including early forms of advertising "retargeting"—reengaging with a user after an ad impression or other event. As TechCrunch explained:

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> The ads themselves could promote a range of products. There's sure to be plenty of app install ads, Facebook's current cash cow, as developers are desperate for installs and willing to pay. Mobile app-reengagement ads could also be popular. You might already have Hotel Tonight installed, but have forgotten about it. If Facebook sees you like traveling, and just checked in to a restaurant in Los Angeles, it could show an ad delivered through FAN in another app that re-opens HotelTonight to a $99 hotel room in the city. Big brands and local businesses might also get in on the action, as Facebook's offline measurement tools can prove that its ads drive in-person sales.

574. Facebook was opening up an entirely new class of features—those dependent on tracking users across devices and apps.

575. FAN went live in October 2014, and what was launched was significantly broader than what Facebook had announced at F8. FAN was not released as a separate advertising stream. Instead, it was implemented as an extension of Facebook's existing advertising system. This meant that a Facebook Ad, using Facebook's granular targeting systems, could be used to target ads outside of Facebook's properties—directly in third-party, mobile apps.

576. TechCrunch covered the new functionality, explaining its significance:

> Until now, each dollar Facebook earned meant annoying its own users with more ads. This created a natural cap on Facebook's revenue unless it wanted to pester us so much that we stopped visiting. Now it can sit back and cash in on all the targeting data it's collected.

577. Facebook had created finely tuned machine-learning systems to target users by, among other things, biographical and interest-based information it had collected about them as they interacted with other Facebook users. Those machine-learning algorithms would now be turned loose outside of Facebook's walled garden, allowing them to granularly target and track Facebook's users even when they were using someone else's mobile application.

578. The value of this new functionality was not just the ability to display ads on mobile applications that Facebook did not control—it also provided Facebook more critical user data, particularly social data, which its machine-learning algorithms needed as fuel. Facebook would be able to learn more about its users, including how they interacted with other users and content outside of Facebook,

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Instagram, or WhatsApp. This made Facebook better at serving both content and advertising to users while on Facebook-controlled apps, reinforcing the DTBE.

579. Initially, Facebook's Login product, which it had promoted at F8 2014, was one of the ways Facebook was able to track users across applications. Users who logged into a third-party app using their Facebook login were then tracked by Facebook as they used those apps.

580. In May 2016, however, Facebook extended FAN even further, to track Facebook users who were not even logged into Facebook. As Facebook explained in a blog article:

> Over the coming months we will expand the reach of Facebook-powered advertising on the Audience Network to include people who don't have accounts. To ensure that the ads people see in the apps and websites in the Audience Network are highly relevant, we will use information we receive from third-party sites and apps that use Facebook technology.

581. On May 27, 2016, the *Wall Street Journal* reported that the change allowed tracking of users across the Internet, positioning Facebook to compete head-on with Google:

> To that end, the social network and online advertising company said Thursday it will now help marketers show ads to all users who visit websites and applications in its Audience Network ad network. Previously Facebook only showed ads to members of its social network when they visited those third-party properties.
>
> The change is a subtle one, but it could mean Facebook will soon help to sell and place a much larger portion of the video and display ads that appear across the Internet. The change will also intensify competition with Alphabet Inc. subsidiary Google, which dominates the global digital-advertising market, and a wide range of other online ad specialists.

582. Facebook now planned to leverage its targeting systems outside its walled garden. It would monitor users who were not logged into Facebook at all, allowing FAN to extend Facebook's edge beyond the Social Advertising Market, which it had dominated by virtue of the DTBE protecting its business.

B. Facebook Acquires Atlas

583. On December 6, 2012, news broke that Facebook was considering acquiring a company called Atlas from Microsoft. Atlas was a software company that both served ads and tracked ad conversions.

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584. For example, Atlas technology would log when a user viewed an ad that was served to them, and then if they later, for example, purchased a product (that is, the ad "converted"), Atlas technology would allow attribution of the sale to the advertisement.

585. Google had paid $3 billion dollars for its own ad-serving product, DoubleClick, in 2007. Although Atlas lacked the sophistication of DoubleClick—particularly after Google had developed and integrated the DoubleClick software with its own—the purchase of Atlas positioned Facebook to grow and extend its capability to granularly target users with advertising well beyond Facebook's own properties.

586. In Facebook's hands, however, Atlas and its technology was even more valuable. As Business Insider explained in December 2012:

> The value of a Facebook-powered/Atlas-supported ad network could be tremendous.
>
> Here's why.
>
> Facebook is the only company in the world that has a billion email addresses, home addresses, and phone numbers on file.
>
> This asset allows Facebook to do something no other Website can.
>
> Facebook can tell marketers whether or not a Facebook user saw, on Facebook.com, an ad for a product before going to the store and buying it.
>
> This is possible because retailers often have their shoppers' phone numbers, home addresses, or email addresses on file. (They buy them from data collection companies.)
>
> In the short term, Facebook will use this process to tell marketers exactly how much their sales increased thanks to ads on Facebook.com.

587. Acquiring software that could track conversions of Facebook ads outside of Facebook's walled garden was a powerful extension of Facebook's targeting apparatus. It closed feedback loops for events that occurred outside of Facebook's view.

588. This ability, however, was about much more. Facebook's DTBE stems both from the data it harvests from its users and the power of its machine-learning models, which consume that data. As users spend more time outside of Facebook's properties, those machine-learning models have less to train

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on, reducing the effectiveness of Facebook's targeting. This in turn reduces engagement within Facebook, and as a result, the value of its targeted advertising. Facebook understood this threat in the early 2010s, with the rise of mobile apps. That is why it was—and remains—vital for Facebook to be able to track its own users when they are not using the core Facebook product, Instagram, or WhatsApp.

589. At its purchase, Atlas already had the necessary functionality, allowing advertisers to plan campaigns, buy ads on sites across the web, and measure their impact. It handled rich media and in-stream video, display ads, and offered APIs for programmatic control.

590. Internally, Facebook saw Atlas as a means to massively increase Facebook's targeting capabilities. As Amin Zoufonoun, Facebook's Vice President of Corporate Development, described to Sheryl Sandberg when Facebook was considering the acquisition, it gave Facebook "immediate scale to retarget, provide premium insights, do look-alike modeling, prove and measure efficacy of [Facebook] as a marketing medium, [and] enhance customer audiences and associated revenue."

591. Most importantly, it gave Facebook the ability to use identity-based targeting through Facebook Identity—Facebook's unique identifier for Facebook users across all browsers and devices—to serve highly targeted ads. Indeed, Facebook had described the value of Facebook Identity as the ability to "target people across browsers and devices" and to "[a]ctivate offline data to enrich online targeting," among other features.

592. On February 28, 2013, Facebook acquired Atlas for approximately $100 million. In its summary of the deal at the time of the transaction, Facebook noted that the transaction was an opportunity to become the "buy-side desktop tool that media planners fire up first thing in the day" and to acquire "a deep installed base of pixels which we can immediately turn on to power conversion tracking and attribution across offerings."

593. The latter was the most important. By pixels, Facebook was referring to embedded web resources that would automatically pull information from a Facebook server when a user visited a non-Facebook site. Sometimes, this would be done though an invisible, single-pixel image, which would download from a centralized server. When the single-pixel image appearing on a third-party site was

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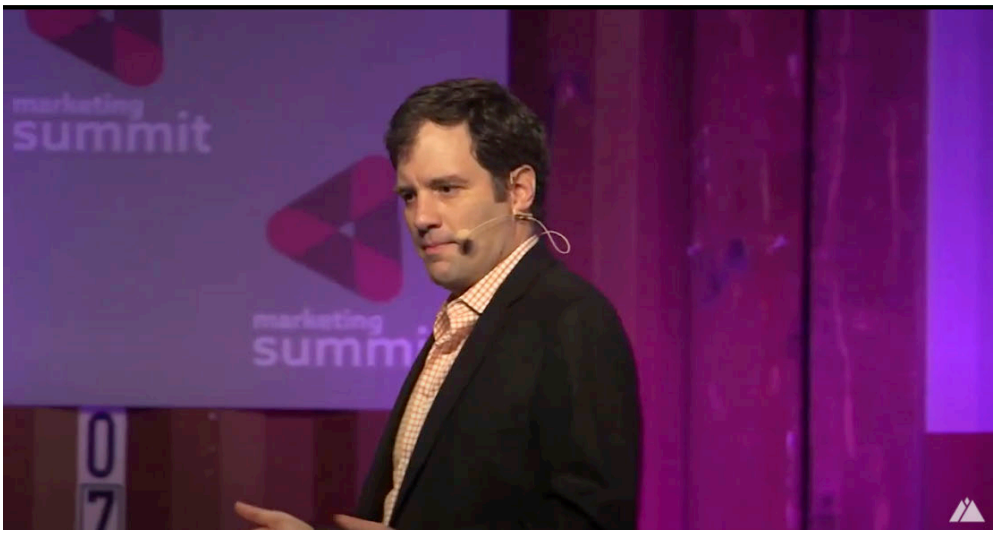
downloaded by a user, Facebook would immediately know and would have the user's browser information, IP address, and device information as a result.

594. On September 29, 2014, Facebook announced through a blog post by Atlas's Managing Director Erik Johnson that Facebook had rebuilt Atlas "from the ground up," meaning that it had integrated it with its Facebook advertising systems. Facebook made the announcement ahead of Advertising Week in New York City.

595. Although Facebook removed the blog post and announcement from its site, *Wired* magazine contemporaneously recounted the focus of the announcement: unlike Google, Facebook would not need Cookies to identify users; it had its own data and targeting systems, which it had trained and honed using user interactions with its own properties:

> In an apparent dig at Google, Johnson writes that the method advertisers have traditionally used to track consumers—cookies—is flawed, because consumers are no longer using one device at all times. "Cookies don't work on mobile, are becoming less accurate in demographic targeting and can't easily or accurately measure the customer purchase funnel across browsers and devices or into the offline world," Johnson writes. He offers "people-based marketing," that is, marketing based on Facebook's data, as the solution. It can not only track users between devices, but it can also connect online campaigns to offline sales to determine how effective a given campaign really was.

596. Johnson spoke at the Web Summit 2014 convention on its first day, November 4, 2014 (pictured below).



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597. The focus of Johnson's Web Summit talk was identifying users across devices and throughout the Internet by using Facebook's user targeting technology:

> If that email address corresponds to an email address you use on Facebook, we can now stitch together ads you've seen anywhere on the internet with a purchase you made in a store. Facebook has had this functionality for some time now, but with Atlas, we're able to take the cross-device, and the people-based and the offline-to-online story that Facebook has and move it to the rest of the internet.

598. Atlas gave Facebook the ability to leverage and extend its DTBE. Facebook could not only target users as they interacted on Facebook-controlled applications, but when they interacted with other apps and websites. This sharpened Facebook's own targeting across its properties.

C. Facebook Positions Itself Against Google by Combining Atlas, Audience Network, and Other Technology

599. By December 10, 2014, Facebook had acquired several key systems that positioned it to extend its targeting advantage beyond Facebook's products. In addition to Facebook Atlas and FAN, Facebook had also acquired LiveRail for approximately $400-500 million.

600. LiveRail connected marketers to publishers on web and mobile to target seven billion video ads to visitors per month. It provided for real-time bidding, meaning that it dynamically matched advertisement inventory with bids from marketers to optimize both revenue and effectiveness of that advertising.

601. The technology Facebook acquired from LiveRail and Atlas, coupled with FAN, together positioned Facebook to expand its dominance beyond its walled garden (Facebook's three primary products—Facebook itself, Instagram, and WhatsApp). Facebook's advertising could reach beyond those apps, tracking users across mobile devices and websites, and using information it gleaned from that tracking to sharpen Facebook's targeting algorithms within its own products.

602. The press likened the combined assets to an "AdTech Voltron," a cartoon robot that assembled a powerful robot out of smaller pieces:

> Here's how the pieces come together.

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> Facebook brings its 1.35 billion users and massive engagement with the News Feed where it shows its ads. Because its huge user base stays logged in across web and mobile, it has a unified understanding of people's identities in a way most platforms don't. Facebook's wealth of personal data means it can target ads more accurately. For instance, it says it can target gender with 90 percent accuracy compared to the online ad industry average of 50 percent.

603. The combination of these properties reinforced Facebook's primary form of leverage in the Social Advertising Market—its ability to granularly target users and to do so with significantly more accuracy than any other competing product. By tracking Facebook users both inside and outside of its walled garden, Facebook's targeting system was poised to span the Internet, mobile applications, and Facebook's social applications, including Instagram and WhatsApp.

604. Through a combination of these assets, Facebook was able to create "Lookalike Audiences," a new product announced in March 2013 that allowed Facebook to use its combined tracking information to train its machine learning algorithms to serve ads more likely to "convert" or otherwise result in desired feedback. Facebook could use a tracking pixel on a third-party site to find users within its own applications similar enough to likewise convert on the same site.

605. Facebook itself provides an example on its website:

> Say you're an online florist that wants to reach people similar to those that made purchases on your website. Now you can use data from your Facebook pixels (Facebook Conversion Pixel or the Custom Audiences for Websites Pixel) to reach people who are most similar people who previously made purchases on your website.

606. Facebook boasted that e-commerce company Shopify "saw a 2x decrease in cost per lead when using lookalikes of their website visitors."

607. The new method of targeting advertisements meant that Facebook's machine learning was becoming more powerful—capable of self-tuning ad campaigns to maximize their effectiveness. After Facebook's ads had run for a while, they would become more effective without the need for manual user input. Facebook's machine-learning algorithms would optimize not only the ad, but Facebook's revenue. All the while, Facebook's algorithms would harvest more information from the users it tracked, allowing

it to further train its machine-learning models. This created a virtuous circle, expanding Facebook's targeting and trove of social data. The net result was a further strengthening of the DTBE.

D. Shadow Profiles and Identifying Users Outside of Facebook's Apps

608. Facebook's new strategy hinged on identifying its own users outside of Facebook's apps. By tracking those users outside of Facebook's walled garden, Facebook became better at targeting them within.

609. That is, by becoming better at serving content to users based on their web browsing or mobile app usage, Facebook could lock users into its own apps, reducing the need for them to leave Facebook apps while on the internet, which in turn made Facebook ads served to its own users significantly more effective than other forms of advertising.

610. Facebook needed a way to keep track of what users did across mobile applications, its own applications, and across the web. It did so by maintaining "shadow profiles" on users.

611. On April 16, 2018, after significant scrutiny before Congress, Facebook revealed the sources of the shadow profile data it collects:

> **When does Facebook get data about people from other websites and apps?**
>
> Many websites and apps use Facebook services to make their content and ads more engaging and relevant. These services include:
>
> - Social plugins, such as our Like and Share buttons, which make other sites more social and help you share content on Facebook;
> - Facebook Login, which lets you use your Facebook account to log into another website or app;
> - Facebook Analytics, which helps websites and apps better understand how people use their services; and
> - Facebook ads and measurement tools, which enable websites and apps to show ads from Facebook advertisers, to run their own ads on Facebook or elsewhere, and to understand the effectiveness of their ads.

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> When you visit a site or app that uses our services, we receive information even if you're logged out or don't have a Facebook account. This is because other apps and sites don't know who is using Facebook.

612. Facebook confirmed its information gathering in its written answers to the United States Senate on June 11, 2018, admitting that Facebook collects extensive data even if a user is not logged into a Facebook account.

613. All of this meant that Facebook was uniquely poised to expand and leverage its position in the Social Advertising Market to challenge Google directly in online search and display advertising, where Google had long established a dominant position. As explained in the next section, Facebook never did so. Instead, it made an anticompetitive bargain with Google to preserve the Social Advertising Market—and Facebook's dominance within it.

X. FACEBOOK AND GOOGLE AGREE NOT TO COMPETE AND TO FORTIFY THE FACEBOOK-DOMINATED SOCIAL ADVERTISING MARKET

614. Although Facebook was poised to expand its advertising and targeting business beyond its social networking apps, it never meaningfully did so. Instead, as explained below, it made a bargain with Google that would help Facebook sharpen its machine-learning algorithms so that it could maintain its superior ability to target its own users. In exchange, Facebook never challenged Google's dominance outside of the Social Advertising Market.

A. Google's Dominance Over Ad Exchanges and Ad Servers and the Looming Facebook Threat

615. As Facebook was taking its first steps outside of its walled garden, Google had already achieved longstanding dominance in a form of advertising that allowed dynamic matching of display ad inventory on websites and apps with marketers seeking to advertise to particular demographics.

616. Publishers provided their advertising inventory to Google's Ad Manager ("GAM"), which would then either match that advertising inventory with a purchaser who had made a direct deal for advertising or serve the available inventory to an ad exchange, where marketers bid for the inventory in real time.

617. As an example, an online newspaper might have a space available on its site for an advertisement. It would convey that information to an ad server, which would in turn find a buyer for the

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space. In some cases, the ad server would send the available space to ad exchanges, which would sell the ad space to the highest bidder.

618. By the mid-2010s, Google's ad server had become ubiquitous. Publishers, such as USA Today, ESPN, CBS, Time, Walmart, and Weather.com, used (and still use) GAM. Today, GAM controls over 90 percent of ad inventory from publishers.

619. Because most publishers use GAM to sell their inventory, Google serves as a middleman to all the advertising exchanges, where bids from marketers are matched in real time with available advertising inventory.

620. In addition to controlling the dominant ad server, Google also runs its own ad exchange, called Google Ad Exchange or "AdX." Google charges an exchange fee for matching purchasers with ad inventory, much of which comes through Google's dominant GAM.

621. Google's unique vantage point provides it with the ability not only to control the inventory provided to exchanges, but to win bids against other ad exchanges.

622. That is, Google tracks website use through its analytics product. It tracks users on its Gmail product. It tracks users when they use Google News. It even provides free DNS servers, resolving IP addresses and web addresses for users across the internet. Google also has a unique vantage point because of its mobile operating system, Android.

623. In recent years, Google's unique tools and properties have made it increasingly better-suited to do what no other advertising exchange can do: identify who the person that visited a publisher's website actually is, *i.e.*, their true, unique identity. Google's ad server and exchange are provided with basic information about the person visiting the publisher's site, such as IP address, device identification information, or browser information. Google's other tools and properties have increasingly positioned it to do make granular identity determinations from this data.

624. In short, by the mid-2010s Google's advertising ecosystem was getting better and better at doing something that Facebook had built its entire ad business upon, but could not outside of its own properties—ascertain identity. (And, of course, Google could not, and cannot, serve ads to Facebook's users on its properties.) By late 2016, with the rise of new technology and carefully targeted information

gathering properties like Android, Google's ad products threatened to encroach upon Facebook's identity-focused ad targeting products—and indeed threatened to superset the Social Advertising Market itself by allowing user and identity targeting outside of Facebook's social network.

625. As Google's capabilities increased, the prospect of a new, highly targeted form of advertising emerged—one that could rival the effectiveness of buying advertising in the Social Advertising Market, where Facebook was dominant and had unrivaled information about its users.

626. At the same time, Facebook became increasingly better in the mid-2010s at identifying user identities and demographic information even outside of its own apps. Through Facebook's series of acquisitions, it was able to target users with its advanced machine-learning, even if the users were not logged into Facebook.

627. By 2018, Facebook was a threat to leverage its technology into Google's territory, including by selling advertising in real-time in mobile applications and on the web. And Google's rapidly growing prowess in discerning identity was an existential threat to Facebook's DTBE.

628. The two solved their problem by coming to an anticompetitive agreement code-named "Jedi Blue," as explained later in this Complaint. However, to properly understand the true stakes and context of the once-looming clash of advertising titans, it is critical understand the role of AI and machine learning tools in online advertising—and how these tools were differently wielded by Google and Facebook in the run-up to their 2018 agreement to divide markets.

B. Google's AI Dominance

629. Unlike Facebook, Google spent the 2010s becoming preeminent in machine learning and artificial intelligence. For example, Google acquired groundbreaking AI technology when it purchased UK-based DeepMind in January 2014 for more than $500 million. And Google has leveraged this and other bleeding-edge machine learning technology throughout its entire ecosystem ever since.

630. Google's machine-learning dominance has allowed it to leverage its large cross-section of user data across the Internet and mobile applications in increasingly powerful ways. For example, on December 14, 2016, Google announced that it had used DeepMind technology to make recommendations

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on its Google Play Store—Google's mobile app store for Android devices. Google explained the problem and its AI-based solution on its AI blog:

> Providing useful and relevant app recommendations to visitors of the Google Play Apps Store is a key goal of our apps discovery team. An understanding of the topics associated with an app, however, is only one part of creating a system that best serves the user. In order to create a better overall experience, one must also take into account the tastes of the user and provide personalized recommendations. If one didn't, the "You might also like" recommendation would look the same for everyone.
>
> Discovering these nuances requires both an understanding what an app does, and also the context of the app with respect to the user. For example, to an avid sci-fi gamer, similar game recommendations maybe of interest, but if a user installs a fitness app, recommending a health recipe app may be more relevant than five more fitness apps. As users may be more interested in downloading an app or game that complements one they already have installed, we provide recommendations based on app relatedness with each other ("You might also like"), in addition to providing recommendations based on the topic associates with an app ("Similar apps").
>
> One particularly strong contextual signal is app relatedness, based on previous installs and search query clicks. As an example, a user who has searched for and plays a lot of graphics-heavy games likely has a preference for apps which are also graphically intensive rather than apps with simpler graphics. So, when this user installs a car racing game, the "You might also like" suggestions includes apps which relate to the "seed" app (because they are graphically intense racing games) ranked higher than racing apps with simpler graphics. This allows for a finer level of personalization where the characteristics of the apps are matches with the preferences of the user.

631. Google thus tackled a problem Facebook had solved socially (with actual social data), but did so in a different way—by using complex machine learning that did not require social signals to make social evaluations and recommendations. Rather than collecting actual friend recommendations and activity, Google used machine learning—*i.e.*, deep neural network models—to study a user's decisions and preferences, then identified that other apps that might interested that user.

632. Facebook, on the other hand, had monetized app installs for years—Facebook's "cash cow"—by using its social targeting systems to traverse its network and coax other users to install apps

using social connections. Facebook used social data, data about its users' interactions within its social network, to devise and train machine-learning algorithms that would make predictions about who would be interested in installing an app.

633. It was this "recommendation engine" technology that was at the center of Zuckerberg's concerns about Tinder during Facebook's early 2010s API scheme. Indeed, in January 2014, Zuckerberg was concerned that "recommendations seems like something that should be right up our alley," but was "something we're not very good at." He found Tinder's growth "alarming" because its recommendation engine was "built completely on Facebook data" and was "much better than anything we've built for recommendations using the same corpus."

634. But as Facebook sought to expand its machine-learning capability outside of its walled garden, it faced a Google that was far ahead of it in the field of artificial intelligence and machine learning. This meant that Google was better at identifying users, and if left unchecked, would be better at targeting Facebook's own users throughout the Internet, including on mobile applications.

C. The Rise of Header Bidding and Facebook's Threat to Compete with Google

635. By 2016, a competitive collision between Facebook and Google looked imminent. Facebook was well positioned to move into the ad exchange business, and Google was poised to break Facebook's dominance over granular, identity-based ad targeting, including within long-siloed social networks such as Facebook, Instagram, and WhatsApp.

636. The threat of competition heightened in 2015 and 2016 when publishers began to adopt a practice called "header bidding." Header bidding routed ad inventory to multiple neutral exchanges each time a user visited a web page in order to return the highest bid for the inventory.

637. That is, publishers could send a standardized header to several exchanges, which included information about the advertising slot and the visiting user, and bidders on the exchanges could within milliseconds place bids for that advertising slot.

638. The new header-bidding technology threatened to cut Google out of the picture. Not only did header bidding undermine Google's ad server, which had routed advertisements to the exchanges, it

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also eroded Google's ability to front-run third-party ad exchanges by giving its own ad exchange an information advantage.

639. Google created its own alternative to header bidding, called Open Bidding, which among other things, allowed Google an advantage over other exchanges, including by charging a penalty fee when an ad was sold on a non-Google exchange.

640. Google aggressively sought to quell the threat of header bidding, but the threat became existential when Facebook threatened to adopt header bidding. In March 2017, Facebook publicly announced it would support header bidding, including in connection with FAN. At that time, when bidding into Google's ad server, networks such as Facebook's FAN had to bid into exchanges and pay exchange fees. By adopting header bidding, Facebook would let web publishers, mobile app publishers, and advertisers avoid Google's exchange fees altogether. They could simply header bid to the exchanges, including through Facebook's valuable FAN.

641. This was viewed as a direct attack on Google's supremacy. Ad Age reported as much on March 22, 2017:

> Facebook just executed what might best be described as a digital advertising coup against rival Google and its DoubleClick empire.
>
> The social media power said Wednesday that it's bringing advertiser demand from its Audience Network to mobile web publishers that use header bidding.
>
> Mobile publishers have been able to tap demand from Facebook Audience Network until now so long as they didn't use header bidding technology, a system that allows them to take bids from multiple buyer pools all at once. But if they wanted to capitalize on header bidding, they had to forgo any demand in FAN.
>
> Now publishers that used header bidding and want to tap advertisers coming through FAN can do so through Facebook technology partners Index Exchange, Sonobi, Amazon Publisher Services, AppNexus, Media.net and Sortable. They can also access FAN through open-source solutions PreBid and PubFood, the company said.

642. As Ad Age observed, the move meant that Facebook's preeminent, identity-based targeting system could now be leveraged across the internet:

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> Publishers like the Washington Post, Daily Mail and Forbes have been quietly working with Facebook to introduce the offering, which gives them the ability to plug into FAN and receive ads bought through Facebook's sophisticated data and targeting technology.

643. Facebook's move had been part of a long-term strategy to draw in Google. Facebook's gambit worked, and Google reached out to Facebook to broker a deal.

D. Google Agrees to Help Facebook Identify Facebook's Own Users Outside of Its Walled Garden, and Facebook Backs Off of Programmatic and Exchange-Trade Advertising

644. Within months of Facebook's official header bidding announcement, Google and Facebook began formal negotiations. By August 2018, the companies were in heated negotiations, with each company internally evaluating contingencies and strategies if no deal could be reached.

645. In September 2018, the companies finally reached an agreement—an anticompetitive one. The agreement was code-named Jedi Blue.

646. Facebook agreed to back off its support of header bidding, leaving Google's dominant position over exchange-based advertising intact.

647. In exchange, Google agreed to give Facebook what it needed—a means to track its own users when outside of Facebook-controlled apps.

648. As part of the agreement, Facebook would pay Google a 5 to 10% transaction fee and would be locked into spending $500 million annually on Google's exchange-based systems.

649. Facebook, in return, would keep its control over the Social Advertising Market. In fact, because of the agreement, Facebook was able to ensure that Google's targeting would not target Facebook's users, solidifying Facebook's preeminence over advertising to users on its social networks. In short, Facebook's agreement with Google shored up Facebook's DTBE within its walled garden at a time when the very existence of a differentiated, Facebook-dominated Social Advertising Market was under threat from advancements in programmatic advertising and tracking technology.

650. As reported by the *Wall Street Journal*, Google provided Facebook a series of concessions to Facebook as part of Jedi Blue that ensured this. For example:

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- Google would help Facebook recognize mobile and web users, particularly Facebook's own users as they used websites and third-party applications.
- Facebook would receive the right to show ads to 90% of the users it recognized as its own.
- Facebook would receive a 300 millisecond "timeout" to recognize its users and bid. Other participants would receive a shorter, 160 millisecond timeout.

651. The threat of Facebook leveraging its targeting systems in Google's space was quelled—by agreement. In exchange, Google propped up the Social Advertising Market. Because Facebook could identify its own users outside of its apps, Facebook could maintain a price premium when it sold advertisements to those users. Facebook also received preference over those users, meaning bidders on other exchanges would only get the remaining 10% of inventory, and even then, would have half the time Facebook had to bid on that inventory.

652. Google handed Facebook control over advertising targeting Facebook users and users of other Facebook-controlled apps. This meant that Facebook became the most valuable means of reaching these users, including while using third-party apps or websites.

653. Without the agreement, Google's machine-learning and AI dominance would allow it to identify users, including Facebook's own users, and target them, eventually based on granular criteria. This would erode the DTBE protecting Facebook's Social Advertising Market and reduce the price premium Facebook could charge (and did charge) for reaching its users.

654. Because of Jedi Blue, Facebook's users remained uniquely Facebook's to advertise to. As a result, advertisers had to pay Facebook (at a premium) to advertise to those users using granular targeting, including demographic-based targeting. By reason of the Jedi Blue agreement, no fungible level of targeted advertising could (or did) emerge that could rival Facebook's ad products for its walled garden users.

655. The agreement also neutralized (or at least substantially delayed) the AI and machine-learning threat posed by Google. Although Google was able to determine the identity of users based on publisher-provided information and its own data collected throughout the Internet, it would not leverage that data to poach advertising sales from Facebook. Rather, Facebook would receive priority over

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advertisements to its own identified users—and would receive Google's help to identify those users. Instead of turning its technology against Facebook, Google used it to bolster Facebook's dominant position in the Social Advertising Market.

656. Put simply, Google and Facebook agreed to divide and segment markets, allowing Facebook to continue charging a significant price premium for its targeted advertising sold in the Social Advertising Market. The agreement also staved off competition that threatened Google's control over exchange-traded advertising throughout the Internet. Both competitors benefited. Competition did not.

XI. FACEBOOK ANTICOMPETITIVELY INTEGRATES THE BACKENDS OF INSTAGRAM, WHATSAPP, MESSENGER, AND ITS CORE FACEBOOK PRODUCT

657. Facebook had entered into an agreement with Google to identify Facebook users as they interacted with websites and apps outside of Facebook's walled garden. With its resources freed up, Facebook turned inward to finally seal off any competition in the Social Advertising Market, significantly and irreversibly strengthening the DTBE.

658. Facebook had for years operated its WhatsApp and Instagram applications as separate businesses. Indeed, Facebook pledged to regulators to keep the companies and their massive data stores separate. [redacted] The purpose of this integration was not (legitimately) technical; rather, the entire plan was an attempt to irreversibly commingle Facebook's various data sources, products, and models so that regulators could not eventually break up, divest, or otherwise cleanly enjoin or monitor the company after a year of growing, worldwide concern about Facebook's data practices and market power.

659. H[redacted] By March 2019—[redacted]—numerous U.S. Senators, including Presidential candidate Elizabeth Warren, had expressly and publicly called for the company to be broken up.

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[redacted] Zuckerberg and Facebook [redacted]

662. Facebook's back-end integration lacked any legitimate technical justification, but was instead solely a means to prevent the regulatory breakup of Facebook, Instagram, and WhatsApp and to cement Facebook's dominance over the Social Advertising Market.

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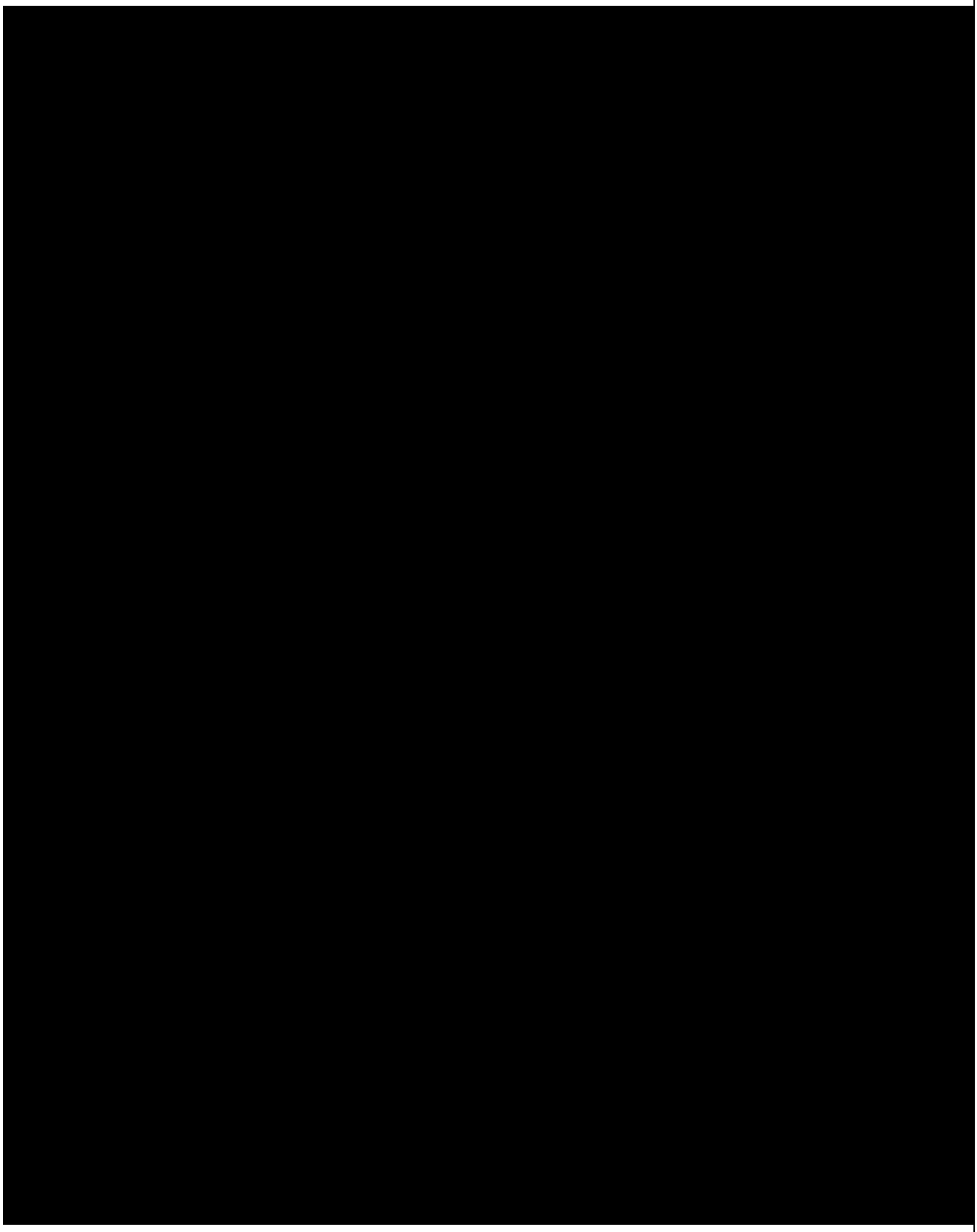

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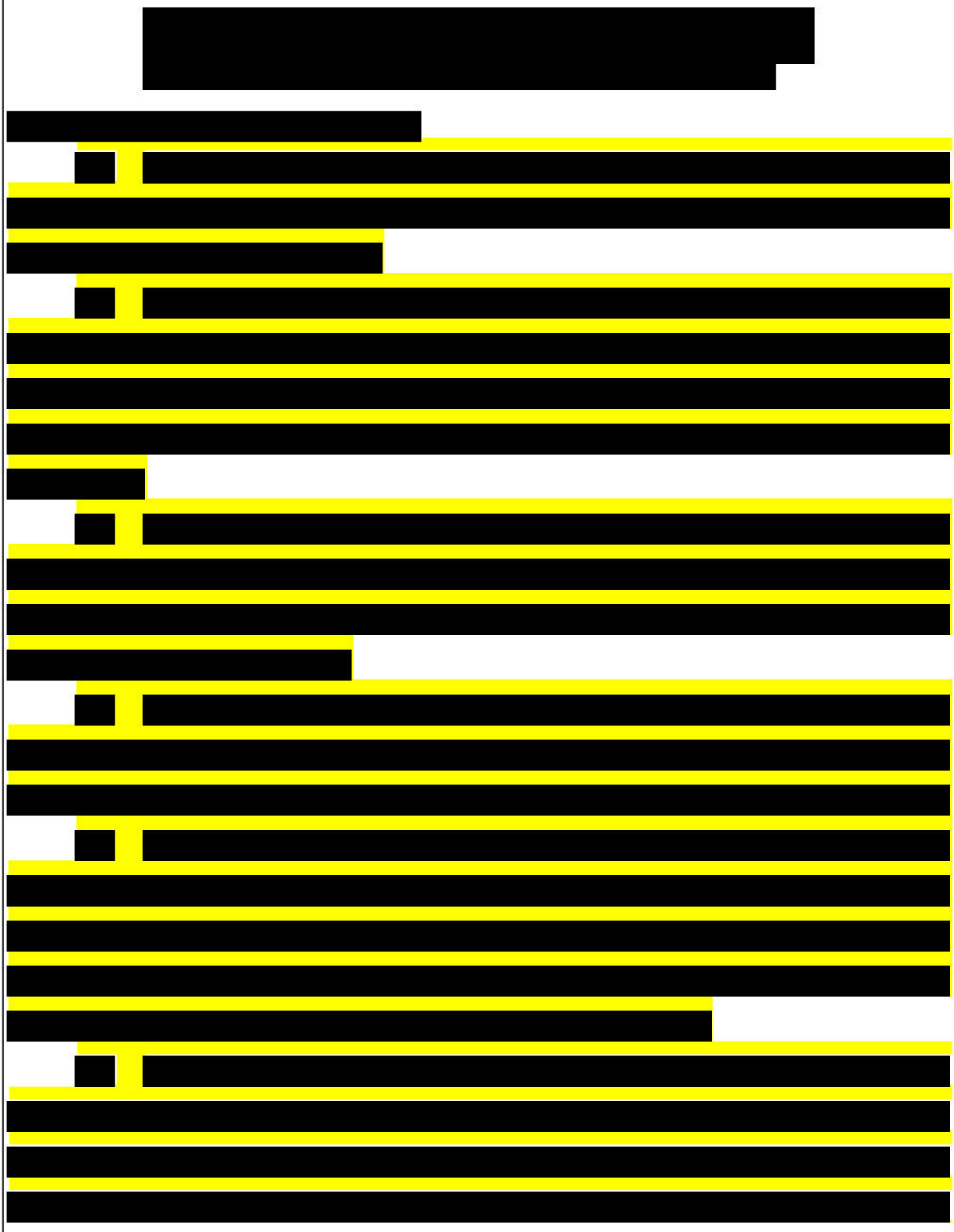

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690. At the time of the Instagram and WhatsApp acquisitions, Facebook had promised regulators that it would operate Instagram and WhatsApp as separate businesses from its core applications, Facebook and Messenger.

691. For example, Facebook had represented to the European Commission's competition regulator that it was unable to match user profiles across WhatsApp and Instagram. The EC regulator relied on those statements as part of its 2014 merger review process.

692. On May 17, 2017, the EC regulator fined Facebook €110 million and explained its reasons for the fine in the following press release:

> The European Commission has fined Facebook €110 million for providing incorrect or misleading information during the Commission's 2014 investigation under the EU Merger Regulation of Facebook's acquisition of WhatsApp . . . .
>
> When Facebook noticed the acquisition of WhatsApp in 2014, it informed the Commission that it would be unable to establish reliable automated matching between Facebook's users' accounts and WhatsApp users' accounts. It stated this both in the notification form and in a reply to a request for information from the Commission. However, in August 2016, WhatsApp announced updates to its terms of service and privacy policy, including the possibility of linking WhatsApp users' phone numbers with Facebook users' identities.
>
> On December 2016, the Commission addressed a Statement of Objections to Facebook detailing its concerns.
>
> The commission has found that, contrary to Facebook's statements in the 2014 merger review process, the technical possibility of automatically matching Facebook and WhatsApp users' identities already existed in 2014, and that Facebook staff were aware of such a possibility.

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[redacted] In March 2018, WhatsApp's founder Brian Acton quit in protest, stating on Twitter: "It is time. #deletefacebook."

697. Zuckerberg had reneged on his promise to limit the monetization of WhatsApp for five years, and had almost immediately began to monetize WhatsApp by matching WhatsApp's massive user base with Facebook's existing user profiles in order to target advertising and to collect social data.

698. Acton left behind $850 million in stock when he quit in protest.

699. WhatsApp's other co-founder, Jan Koum, left in April of 2018. Likewise, Instagram's founders Kevin Systrom and Mike Krieger followed suit shortly after, resigning from Facebook in the Fall of 2018.

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D. The Call to Break Up Facebook, WhatsApp, and Instagram

701. On March 20, 2018, the Washington Post reported that the Federal Trade Commission had opened an investigation after Facebook's infamous Cambridge Analytica scandal. In the run-up to the 2016 United States Presidential election, Facebook had allowed Cambridge Analytica to pull massive amounts of user information through Facebook's APIs, affecting tens of millions of Facebook's users. The scandal was surprising, as Facebook had been telling developers and the public that it was no longer allowing third-party apps to access to a user's friends and feed information. The FTC immediately began looking into whether Facebook had violated its 2011 consent decree with the agency.

702. On April 10, 2018, Mark Zuckerberg was called to testify before the United States Senate. Senators' questions pointedly turned to Facebook's monopoly position, particularly during questioning by Senator Lindsey Graham of South Carolina. Graham repeatedly questioned Zuckerberg about Facebook's competitors, and directly asked him if the company had a monopoly.

703. By the end of 2018, there was widespread public sentiment, including in Washington D.C., that Facebook had become an anticompetitive monopolist. Several United States Senators introduced measures to reduce Facebook's market power, including by proposing modifications to statutory provisions under the Communications Decency Act that have been interpreted to provide Facebook with broad legal immunities that many other companies did not and do not enjoy. As a September 5, 2018, article in The Verge recounted:

> In some ways, Facebook is the most urgent case. It's inescapable, opaque, and wields immense power over the fundamental functions of our society. More than any other tech giant, Facebook's power feels like an immediate threat and the most plausible first target for congressional action. Sen. Mark Warner (D-VA) has already laid out 20 different measures that would rein in Facebook and other tech giants, ranging from GDPR-style data portability requirements to more carveouts of Section 230.
>
> But while Warner's measures focus on nudging Facebook toward more responsible behavior, a growing number of critics see the problem as Facebook itself. It may be that a social network with more than 2 billion users is simply too big to be managed responsibly, and no amount of moderators or regulators will be able to meaningfully rein the company in. For those critics, social networks are a natural monopoly, and no amount

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> of portability requirements will ever produce a meaningful competitor to Facebook or a meaningful check on its power.
>
> If that's true, ***a classical antitrust breakup (as some have suggested) would seem like the only option***.

(emphasis added).

704. Cries to break up Facebook were becoming more common. Professor Tim Wu, known for his work on "net neutrality"—in fact, for coining the phrase—had called for Facebook's breakup. His focus was Instagram and WhatsApp. A September 2018 article in The Verge explained Wu's position:

> I think if you took a hard look at the acquisition of WhatsApp and Instagram, the argument that the effects of those acquisitions have been anticompetitive would be easy to prove for a number of reasons, says Wu. And breaking up the company wouldn't be hard, he says.

705. On March 8, 2019, Senator Elizabeth Warren—then running for President of the United States—directly called for the breakup of Facebook. Warren's focus was on the Instagram and WhatsApp acquisitions. As Warren stated in a blog post, she believed several big tech mergers should be unwound, including Facebook's WhatsApp and Instagram acquisitions:

> Current antitrust laws empower federal regulators to break up mergers that reduce competition. I will appoint regulators who are committed to using existing tools to unwind anti-competitive mergers, including:
>
> - Amazon: Whole Foods; Zappos
> - Facebook: WhatsApp; Instagram
> - Google: Waze; Nest; DoubleClick
>
> Unwinding these mergers will promote healthy competition in the market—which will put pressure on big tech companies to be more responsive to user concerns, including about privacy.

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Warren's public statement was sure to place the public (and perhaps, regulatory) eye on Zuckerberg's incipient integration plan. [redacted]

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This was a solved problem, even at Facebook: as the New York Times reported on April 5, 2016, citing WhatsApp's own company blog—

> SAN FRANCISCO – WhatsApp, the messaging app owned by Facebook and used by more than one billion people, on Tuesday introduced full

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> encryption for its service, a way to ensure that only the sender and recipient can read messages sent using the app.
>
> Known as "end-to-end encryption," it will be applied to photos, videos, and group text messages sent among people in more than 50 languages across the world . . . ."

715. In short, Facebook had long already possessed the technology, the know-how, the resources, and indeed the business experience to introduce end-to-end encryption in any of its other messaging services, and to its photo, video, and group text functions across its various products. Indeed, ***Facebook had already done so in 2016, with WhatsApp.***

716. Moreover, encryption was, simply, a completely separate technical issue from integration. Encrypting communications would not "integrate" anything (indeed, Facebook had chosen to end-to-end encrypt WhatsApp, and nothing else, in 2016); and integrating multiple products would not suddenly encrypt anything. The two technical concepts were—indisputably—totally distinct, [redacted]

717. However, using the phrase "end-to-end encryption" in any context did always bring one predictable result: it immediately distracted from and overwhelmed any other technical issue in the conversation, as law enforcement and civil libertarians would immediately fill the room with competing views of electronic privacy at the mere mention of E2EE. The April 2016 New York Times article announcing WhatsApp's new end-to-end encryption was a case in point:

> The move thrusts WhatsApp further into a standoff between tech companies and law enforcement officials over access to digital data, one that pits Silicon Valley's civil libertarian ideals against the federal government's concerns over national security. Increased encryption will make it more difficult, if not impossible, for the authorities to intercept WhatsApp communications for investigations. . . .
>
> End-to-end encryption for WhatsApp is of particular concern to the F.B.I., considering the service's huge subscriber base and large international footprint. With increasing amounts of communications now sent across messaging services, encrypted texts, video, photos and the like may end up being more problematic for law enforcement than locked devices. The encryption on WhatsApp will be turned on by default, so users will not be required to enable it themselves.

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[redacted] So when Facebook's back-end integration—a completely distinct technical concept that would irreversibly commingle the data and architecture of four different Facebook products to prevent divestiture—was about to be thrust into the spotlight by Elizabeth Warren in March 2019, [redacted]

721. And virtually every news outlet reported near-exclusively on the propriety and background of end-to-end encryption and what it would mean for Facebook's products.

722. Congress and the U.S. Department of Justice also focused almost exclusively on Facebook's announcements about end-to-end encryption. As Engadget reported on October 3, 2019:

> The Department of Justice is set to ask Facebook to pause plans for end-to-end encryption across all of its messaging services. It will urge the company not to move forward "without ensuring that there is no reduction to user safety."
>
> Attorney General William Barr is set to make the request in an open letter to Facebook CEO Mark Zuckerberg on Friday. Acting Homeland Security Secretary Kevin McAleenan, UK Home Secretary Priti Patel and Australian Minister for Home Affairs Peter Dutton also signed the draft letter . . .

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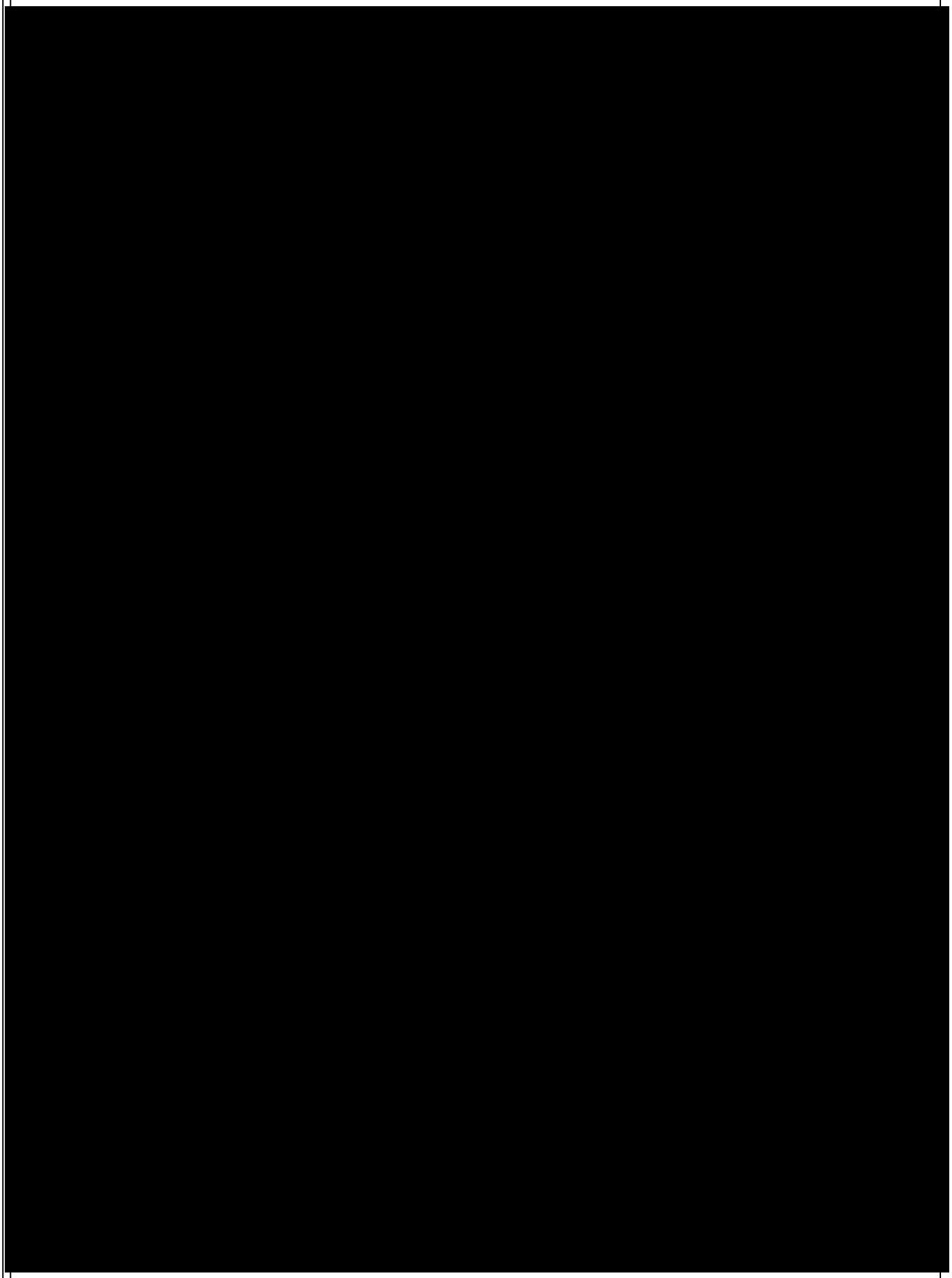
[redacted]



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[redacted]

Of course, the integration and the end-to-end encryption had nothing in particular to do with one other. Facebook could easily integrate its messaging systems and harvest data from them [redacted]

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[redacted]

[redacted] And, likewise, end-to-end encryption could have been implemented at the application level without integrating the back-ends of the messaging systems [redacted]

755. In fact, WhatsApp already had end-to-end encryption features as part of its messaging Platform. As the WhatsApp website stated in April 2016:

Security by Default

> WhatsApp's end-to-end encryption is available when you and the people you message use the latest versions of our app. Many messaging apps only encrypt messages between you and them, but WhatsApp's end-to-end encryption ensures only you and the person you're communicating with can read what is sent, and nobody in between, not even WhatsApp. This is because your messages are secured with a lock, and only the recipient and you have the special key needed to unlick and read them. For added protection, every message you send has its own unique lock and key. All of this happens automatically: no need to turn on settings or set up special secret chats to secure your messages.

756. Again, WhatsApp posted about this on its company blog. The New York Times wrote an article about it. Facebook knew how to implement end-to-end encryption within its products—and it had already done it, years prior.

757. Indeed, WhatsApp had implemented end-to-end encryption in 2016, and nothing about that feature required any form of integration with Instagram or Facebook Messenger. The purported addition of "end-to-end encryption" in 2019 was not, as Facebook suggested, part and parcel with the back-end integration. To the contrary, it had nothing to do with it.

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[redacted]

762. At the same time, these Facebook product changes that occurred in early 2019 and continue (as far as Plaintiffs can discern based on limited discovery) to this day unquestionably strengthened and fortified the DTBE and helped to maintain Facebook's dominance in the Social Advertising Market, irreversibly bringing together massive quantities of social data [redacted] by Facebook.

763. Facebook's integration-related product changes had an anticompetitive effect in the Social Advertising Market because, among other things, these product [redacted] (i) by creating the largest aggregation of social targeting data the world has ever known, and (ii) by preventing or substantially limiting the divestiture or separation (including court-ordered divestiture pursuant to regulatory decree—and the Federal Trade Commission is currently seeking just this) of discrete social data from WhatsApp, Instagram, and Facebook / Messenger.

764. But the above was an intended feature, not a bug. As explained in the previous sections, these anticompetitive product changes by Facebook beginning in 2019 [redacted]

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[redacted] Moreover, as explained in the previous sections, these anticompetitive product changes lacked a legitimate technical (or non-anticompetitive) justification.

XII. THE RELEVANT MARKET

765. Plaintiffs are consumers and purchasers in the relevant market at issue in this case—the Social Advertising Market. Plaintiffs are direct purchasers of advertising products from Facebook and were anticompetitively harmed as participants in the Social Advertising Market.

A. The Social Advertising Market

766. The Social Advertising Market is a submarket of online advertising, the latter of which includes banner ads, search-based ads, and advertising on social networks. Social advertising, however, is not fungible or interchangeable with these other forms of online advertising. Indeed, social advertising allows advertisers to granularly target groups of users for ads by their attributes, including by the attributes of their networks.

767. Thus, because of the extensive ability to target advertisements to users on social media sites like Facebook, search and banner advertising are not reasonable substitutes.

768. Several relevant factors indicate that the Social Advertising Market is a distinct submarket of online advertising and more general advertising markets:

769. ***Industry or public recognition of the submarket as a separate economic entity.*** Social advertising is broadly considered to be distinct from other forms of advertising by market and industry participants. For example, the advertising company Outbrain describes the differences between social ads on its blog as follows:

> Paid social ads are served via algorithms that define what the user might be interested in, based on past activity in their social accounts, such as likes, shares, and comments. Unlike search, which is a focused, goal-oriented activity, browsing on social is more relaxed. Think cat memes, vacation snaps, and fun quizzes. Nevertheless, the social platform has accumulated masses of data about every specific user, which can be leveraged to target specific audiences with ads that are likely to be of interest to them.

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770. Outbrain explains that social ads are considered useful for a distinct purpose:

> Social ads are best for targeting audience segments who may be interested in your product or services, based on a range of targeting criteria—location, age group, gender, hobbies, interests. Social networks, such as Facebook, have advanced targeting capabilities, which means you can fine-tune your targeting criteria to reach a very specific, high-quality audience.

771. Outbrain explains that search ads are different, as they "are great for targeting customers when they are already looking for you (*i.e.*, they search your company name or product), or if they are searching for a specific product, service, or piece of information that you can provide." Outbrain also distinguishes social advertising from other forms of online advertising, like discovery advertising.

772. Moreover, providers of business statistics such as statista.com also provide information as to social media advertising as a distinct submarket of online and general advertising.

773. As another example, in March 2015, leading advertising publication AdAge referred to Facebook's Custom Audience targeting, which is unique to social advertising, as "potentially different and more special because they have this richer level of data."

774. Likewise, industry publication Marketing Land reported in an October 14, 2019 article that media agency Zenith, which is owned by Publicis Media, predicted growth in the social media advertising segment as distinguished from search and television advertising, with social media ads coming in third behind television and paid search advertising.

775. On an October 23, 2012 earnings call, Facebook's COO Sheryl Sandberg said, "On the question of where advertisers are, as I've said before, we are a third [thing]. We're not TV, we're not search. We are social advertising, and I would say our clients are on different parts of that adoption curve." Later, on a May 1, 2013 earnings call, Sandberg explained: "As I said before, the thing about brand advertisers is that they got very used to TV, then they got very used to search, and we are a third thing."

776. Even academic articles, including those published in the Journal of Advertising, have analyzed the market for social media advertising as a distinct segment, with well-defined engagement characteristics.

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777. ***The product's peculiar characteristics and uses.*** Social advertising has a distinct purpose from other forms of advertising. Social advertising has different applications than other forms of online advertising. Namely, social advertising allows granular targeting based on user attributes, user interests, and group attributes. Moreover, because of the detailed amount of information that can be collected about users as they engage on social media platforms, social advertising can seek out other users with similar behavioral characteristics.

778. Facebook, for example, describes its own targeting capabilities as follows:

> Facebook ads can be targeted to people by location, age, gender, interests, demographics, behavior and connections. You can also use more advanced targeting tools like Lookalike Audiences, which lets you target people similar to the people who already engage with your business, or you can layer your targeting options to select a more specific audience.

779. Facebook allows advertisers to create Lookalike audiences. Thus, unlike search or other forms of advertising where the ad is created and placed to reach a preexisting audience, Facebook is able to algorithmically combine a subset of its users to fit an advertisement. This capability is unique to social advertising.

780. As Facebook explains on its website:

> When you create a Lookalike Audience, you choose a source audience (a Custom Audience created with information pulled from your pixel, mobile app, or fans of your page). We identify the common qualities of the people in it (for example, demographic information or interests). Then we deliver your ad to an audience of people who are similar to (or "look like") them.

781. Because of the level of granular data Facebook collects from its users, it can provide targeting flexibility like no other advertising medium. As Facebook explains:

> You can choose the size of a Lookalike Audience during the creation process. Smaller audiences more closely match your source audience. Creating a larger audience increases your potential reach, but reduces the level of similarity between the Lookalike Audience and source audience. We generally recommend a source audience with between 1,000 to 50,000 people. Source quality matters too. For example, if a source audience is made up of your best customers rather than all your customers, that could lead to better results.

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782. Social advertising is also marked by the ability to algorithmically refine advertising targeting as users interact with the ads. For example, Facebook allows users to place a pixel on their website that is pulled off Facebook's servers when the site is accessed. Facebook is thus able to determine the efficacy of ads run on Facebook once the user transitions to an advertiser's own website. Over time, Facebook's advertising becomes more targeted and more effective in terms of particular advertising goals, such as lead generation or online purchases.

783. Other social networks, such as Twitter, provide similar targeting abilities. Twitter, for example, allows targeting based on location, language, device, age, and gender, but also allows for the targeting of audience types, including algorithmically tailored and custom-created audiences.

784. These targeting features, which are available on social advertising platforms, are not comparably available as part of other forms of online advertising, such as display and banner ads or search ads.

785. ***Unique production facilities.*** Social advertising requires data collected from users on an inherently social application. A user's search history, for example, will not provide enough data to create highly targeted advertising features, such as Facebook's Lookalike Audiences. Likewise, passive advertising, such as banner ads, or even general magazine or publication ads, provides little granular data that can then be used to further refine the targeting of advertising.

786. Providers of social advertising require specialized means of production because they must rely on data harvested from engagement among networks of users to facilitate highly targeted advertising. Platforms capable of delivering social advertising must therefore provide functionality such as image and video sharing, messaging, matchmaking, content sharing, and other inherently social features in order to obtain the data needed to allow for granular user and user network targeting.

787. Because social advertising allows iterative refinement of target audiences, a provider of social advertising must employ machine-learning or artificial intelligence algorithms that are trained on data collected from users as they interact and engage with content and advertising. As Facebook's head of its Applied Machine Learning Group, Joaquin Quiñonero Candela, told *Wired* magazine (emphasis in original):

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> ***Facebook today cannot exist without AI.*** Every time you use Facebook or Instagram or Messenger, you may not realize it, but your experiences are being powered by AI.

(emphasis added).

788. Other forms of advertising generally do not require sophisticated machine learning or artificial intelligence. For years prior to the advent of modern machine learning techniques, search engines such as Yahoo and Google used far less sophisticated algorithms to match user searches with suggested websites and, in turn, advertisements. Traditional advertising, such as magazine or television ads, require no algorithms at all, let alone artificial intelligence.

789. ***Distinct customers.*** Social advertising customers are distinct from search advertisers and passive display advertisers. Moreover, social advertising is generally more effective at targeted advertising rather than reaching a massive number of people.

790. Customers advertising on search engines are generally seeking priority among the search results returned given a particular keyword. Customers advertising on social media platforms are searching for users that fit a particular, predefined profile or set of characteristics. Small businesses that do not generally have the budget to bid on coveted search results are nonetheless able to bid on granularly defined audiences on a social media platform like Facebook.

791. ***Distinct prices and sensitivity to price changes.*** Social advertising prices are distinct from other forms of advertising. In search-based advertising, certain search keywords are bid up by many advertisers seeking to have their ads displayed as part of search results. This means that prices in certain categories, such as legal or home improvement, will be significantly higher on search-based platforms than on social advertising platforms like Facebook. For example, legal ads are on average $1.32 on a cost-per-click basis on Facebook, whereas they are $6.75 on a cost-per-click basis on the Google Ads platform. Likewise, consumer services ads are on average $3.08 on a cost-per-click basis on Facebook's platform vs. $6.40 on Google Ads.

792. Because bidding on Google Ads and other search-based advertising is zero sum, meaning only a certain number of ads can be coupled with a particular set of search keywords, pricing is more sensitive to changes in demand.

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793. Social advertising, however, allows granular targeting, avoiding much of the zero-sum nature of other forms of advertising bidding. Moreover, social advertisers like Facebook can tailor audiences, reducing the likelihood that advertisers will have to compete for the same display opportunity at any given point in time.

794. Other general forms of advertising such as television and print are even more zero-sum, as there are limited time slots or available pages in a newspaper or magazine. Pricing is thus more sensitive to demand in these forms of advertising.

795. Social advertising is thus entirely distinct. Because of the ability to target audiences to advertising, pricing is proportional to the generality of the targeting, not simply to the general demand for a limited search term, key word, or periodical placement.

796. Moreover, Facebook has been able to consistently raise its prices in almost every year it has sold advertising without facing price pressures from competitors. On a cost per mille (CPM)—or cost per thousand advertising impressions—basis, Facebook's advertising prices grew 90 percent year over year according to a report at the end of 2019. In 2018, Vox reported that CPM prices on Facebook had increased 122 percent year over year. In 2017, Facebook's CPMs increased 171%. Facebook raised prices in prior years as well.

797. ***Specialized vendors.*** The Social Advertising Market has its own distinct and specialized vendors, namely advertising agencies such as Lyfe, Thrive, Volume Nine, Sociallyin, and Firebelly Marketing, all of which boast a specialization in social media advertising and provide specialized social media management products. There are many such specialty advertising agencies that specialize in creating social media advertising campaigns. Moreover, specialized social media analytics vendors also exist, such as Socialbakers, which provides aggregated analytics across social media platforms. There is an entire ecosystem of vendors specializing in social advertising—an indicator that the Social Advertising Market is its own distinct submarket of online advertising, requiring its own unique tools and expertise.

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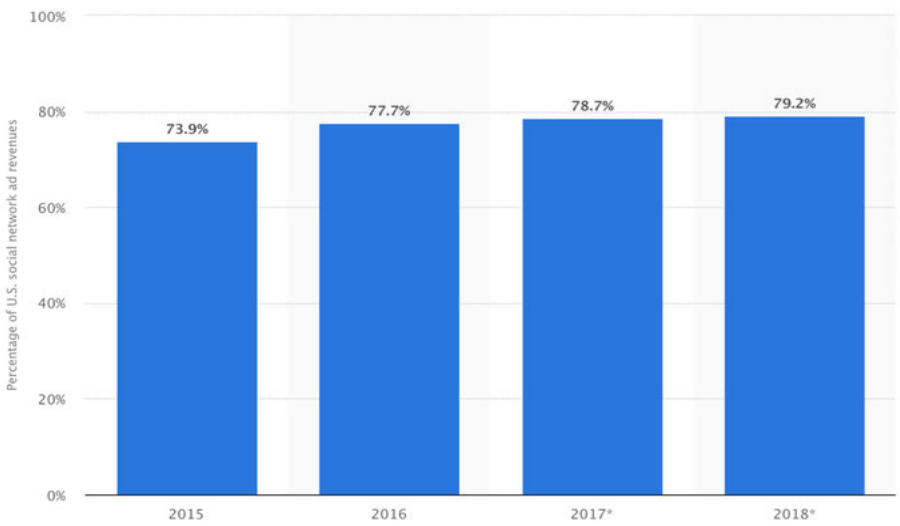
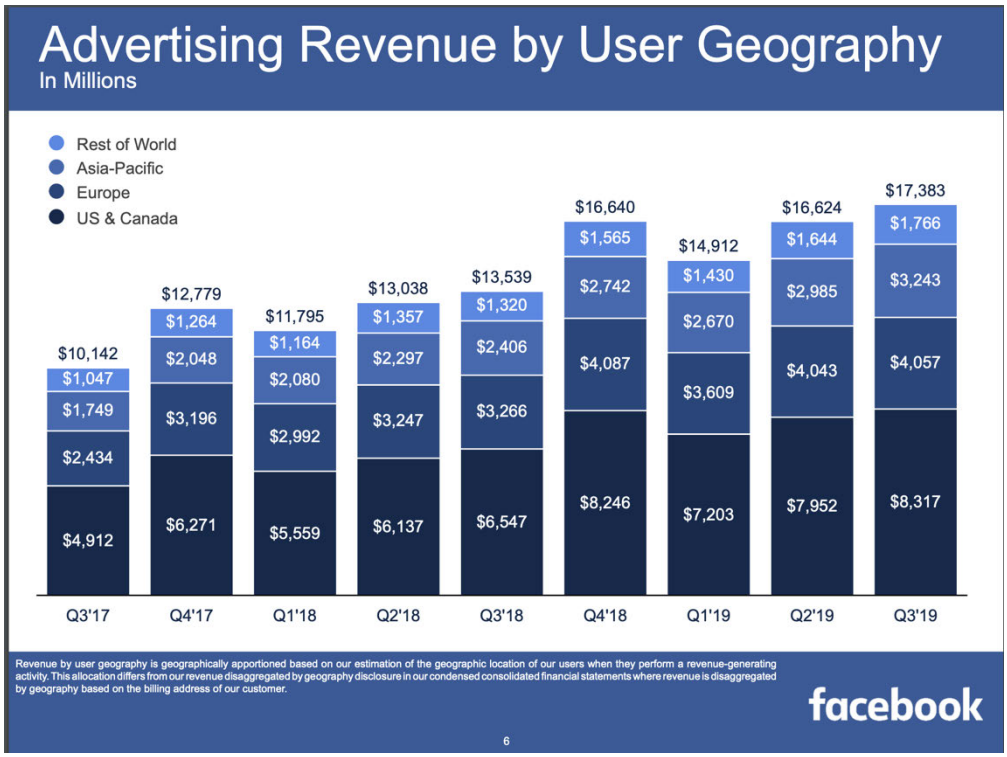
798. Facebook's revenue share of the Social Advertising Market is approximately 80%. Its share has been above 70% since 2015. It remains above that threshold to this day.



799. Facebook's advertising revenue has steadily grown both in the United States and globally. Facebook reported advertising revenues totaling $17.383 billion as of Q3 2019. Approximately $8.3 billion of that advertising revenue came from the United States.



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800. From 2014 to 2016, Facebook's advertising revenues grew from $2.9 billion to $6.436 billion. During that period, and even before then, Facebook was one of the few social networks that significantly monetized its network by selling advertising. Other competitors did not come close, and Facebook established unrivaled dominance in the Social Advertising Market and maintains that dominance to this day.

801. Twitter, one of Facebook's only competitors to sell significant social advertising during the same period Facebook generated revenue in the Social Advertising Market, has never exceeded $800 million in advertising revenues. Revenues in Q1 2012 were approximately $45 million, growing to $432 million in Q4 2014, and standing at $702 million as of Q3 2019.

802. LinkedIn, another competitor that sells social advertising, generated roughly $2 billion in overall annual revenue by the end of 2018, with some portion of that coming from advertising.

803. Considering the revenue generated by LinkedIn and Twitter, Facebook's advertising revenue accounts for approximately 86% of the total revenue share across the three largest firms competing in the Social Advertising Market. Excluding the contributions from minor competitors that monetize their social networks, the HHI of the Social Advertising Market is approximately 7,685, well beyond what the DOJ considers a highly concentrated market.

B. Barriers to Entry

804. The Social Advertising Market is protected by the Data Targeting Barrier to Entry that prevents Facebook's competitors from entering the market. Without a critical mass of social data and machine-learning / AI technology, market participants in the Social Advertising Market cannot generate revenue.

805. Moreover, without adequate social data and engagement with the social network, market participants cannot display content to users that would provide enough value to generate engagement and additional social data.

806. Likewise, without a critical mass of social data, advertising targeting will not be possible or will be substantially diminished in effectiveness, thus reducing revenues in the advertising sales in the Social Advertising Market.

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807. A firm's market power in this market therefore depends on obtaining a critical mass of social data and the technology to mine it. Because of network effects, users will not use a social network that lacks enough social data to provide targeted content or to provide valuable connections to other users. However, once a certain amount of social data is obtained by a market participant, a feedback loop may form as a result of network effects, further increasing the amount of social data generated by the social network.

808. A new entrant must therefore expend significant amounts of investments in capital, technology and labor to create a network large enough to create the network effects necessary to compete with dominant firms in the market.

809. Because of the large amount of capital and social data required to successfully enter the Social Advertising Market, the DTBE effectively excludes entry by a new competitor, even a well-funded one. Indeed, the DTBE prevented Google from successfully entering the market for social data and the Social Advertising Market with its Google+ social networking product.

810. Although Google+ had successfully replicated Facebook's core functionality and even added additional functionality to its software, its entry failed because it lacked the critical mass of social data that is required to reverse the network effects protecting Facebook. Without that critical mass, users will not incur the costs of switching from Facebook's social network to a new entrant's social network. That is, a new entrant will not be able to provide a valuable network of engaged users upon entry to justify a Facebook user to change social networks.

811. That is precisely what happened to Google. Although it had a massive user base, it lacked engagement, which meant it did not provide a sufficient amount of social data that could be used to target content and advertising to users. This, in turn, reduced the value of the entrant social network and accordingly the attraction of switching from Facebook's social network to Google's.

812. The DTBE continues to reinforce Facebook's dominant position. In fact, by excluding rivals and potentially competing social networks through the anticompetitive scheme described in this Complaint, Facebook strengthened the DTBE, providing it a larger share of social data and a stronger

monetization channel through social advertising. The additional amount of social data increases the value of its network, and the revenue from social advertising increases the cost of entry for a new rival.

813. Other barriers to entry in the Social Advertising Market include, but are not limited to, the high cost of development, data management, talent acquisition and retention, server infrastructure, development infrastructure, software technology, software libraries, and a brand and marketing presence sufficient enough to attract an engaged user base.

C. Relevant Geographic Market

814. The relevant geographic market is the United States Social Advertising Market.

815. For the social data that fuels a social advertising product, social data must be compatible with the customers purchasing that data. Thus, social data about a foreign market may be of little use for a U.S.-based advertiser. The data may be collected in a different language, may involve interests more pertinent to a particular geographic region (*e.g.*, American Football vs. Rugby), and may contain a demographic of users that share a common culture or merely a close proximity.

816. The same is true for the Social Advertising Market. An advertiser seeking to sell products designed for consumption in the United States may not have any use for a platform's advertising targeting capabilities outside of the United States. In the U.S., Facebook enjoys a higher market share of the Social Advertising Market than it does worldwide (which is already very high, as described in subsection VI.A). In short, Facebook enjoys an even more dominant share of the U.S. Social Advertising Market than it does globally.

817. In the U.S., Facebook's market share of the social data generated by users is even greater than its global market share. Services such as WeChat are geared towards Asian markets, particularly China, and do not generally compete in the U.S. market with Facebook's Messenger, Instagram, and core social networking product. Thus, Facebook's U.S.-based market share is even higher than its global market share referenced above in VI.A, which is already a dominant share of the Social Advertising Market.

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XIII. HARM TO COMPETITION AND ANTITRUST INJURY

818. Facebook's anticompetitive scheme had the purpose and effect of monopolizing the Social Advertising Market in the United States. Facebook's conduct allowed it to maintain the monopoly and market power it had obtained by 2010 in the Social Advertising Market, and/or Facebook intended and attempted to acquire such a monopoly through its anticompetitive scheme.

819. Specifically, Facebook engaged in a series of acts in furtherance of its scheme, including, but not limited to:

- the targeting of competitors for coercive Whitelist and Data Sharing Agreements on pain of denial of access to Facebook's Platform and APIs, including Facebook's Events APIs;
- [redacted]
- entering into an anticompetitive agreement with Google to bolster and reinforce Facebook's dominant position in the Social Advertising Market; and
- [redacted]

820. This conduct, each individually, and together as a whole, harmed competition in at least the following ways:

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821. *First*, Facebook's conduct resulted in the exclusion of actual and potential competitors from the Social Advertising Market. By entering into a series of anticompetitive whitelist and data sharing agreements after scuttling its Platform, Facebook was able to obtain a superset of the social data collected by third-party apps. Facebook leveraged deprecation decisions, [redacted], to obtain social data and signals from third parties. [redacted]. Facebook fended off the threat beyond its walled garden with an anticompetitive agreement with Google. Facebook used deception to obtain through Onavo spyware user information that ordinary competitors would not have access to— [redacted]. This conduct collectively ensured that a rival Social Advertising Platform could not enter the market and that regulators could not break up Facebook or otherwise regulate its conduct.

822. *Second*, Facebook's conduct reduced consumer choice / welfare. Facebook's conduct ensured that there would be no competition by a rival social advertising platform on non-price bases, such as, for example, increased privacy, more features, higher quality features, new features, more valuable social connections, reduced advertising to users, or new use cases. The scheme also foreclosed new or alternate business models by competitors or potential competitors.

823. Additionally, Facebook's Onavo surveillance system exfiltrated personal and sensitive data from user devices, [redacted]. Moreover, this stolen

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Onavo data was not available to rivals or potential entrants in the Social Advertising Market, ensuring that there would be no competitive price check to Facebook's supracompetitive social advertising prices.

824. Likewise, user data was incorporated into Facebook's advertising targeting systems by virtue [redacted]. The net result was to strengthen Facebook's position in the Social Advertising Market, reducing the ability of other firms to enter the market, particularly without access to [redacted] Facebook obtained by threatening competition with, and capturing data from, these companies.

825. Facebook also reduced advertising consumer choice. Because of Facebook's conduct, Facebook's targeting ability vastly increased and the ability of a potential competitor to access a meaningfully unique store of social data was sealed off, preventing other social advertising companies from entering the Social Advertising Market. This resulted in fewer Social Advertising choices for advertisers and left only Facebook's monopoly rents as available prices in the Social Advertising Market.

826. *Third*, Facebook's conduct allowed it to raise prices. Facebook's anticompetitive scheme has allowed it to raise prices for social advertising during and the execution of the scheme and Facebook's course of conduct, including across both class periods. Facebook continues to be one of the only sources for targeted social advertising in the United States and in most of the world. As evidence of its market power in the Social Advertising Market, Facebook has raised prices without sacrificing any demand.

827. For example, Facebook's requirement that developers purchase advertising as a condition of maintaining access to Platform features artificially created demand for Facebook's advertising products, particularly its mobile advertising product. This had the purpose and effect of directly inflating advertising prices.

828. Similarly, [redacted]

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[redacted], and ultimately allowed Facebook to maintain and raise prices in the Social Advertising Market with little or no competitive check in the months and years [redacted].

829. In addition, Facebook's anticompetitive agreement with Google allowed Facebook to track Facebook, Instagram, and WhatsApp users outside of those applications and gave Facebook priority when advertising to them. As a result of that agreement, Facebook did not meaningfully compete with Google in programmatic and display-based advertising product markets and sub-markets, and Google did not leverage its ability to identify and target Facebook users, which would diminish Facebook's dominance over targeted advertising to those users while on Facebook's social network. Because Google bolstered and reinforced Facebook's dominant position and market power in the Social Advertising Market, Facebook was able to maintain and raise prices with little or no competitive check.

830. Next, by strengthening the DTBE, eliminating competition and preventing competitive entry, and by capturing user social data from various sources through the conduct set forth in this Complaint, including by entering into a series of anticompetitive whitelist agreements with targeted developers after scuttling its Platform; [redacted], Facebook was able to charge supracompetitive prices without any meaningful check.

[redacted] *Fourth*, Facebook's conduct strengthened the DTBE, creating a protective moat around Facebook's monopoly. Facebook's conduct fortified and expanded Facebook's access [redacted]

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[redacted]

832. Each of Facebook's exclusionary acts lack any procompetitive benefit / justification, let alone any justification that could outweigh the anticompetitive effects of the acts. [redacted]

833. The anticompetitive effects of [redacted], including the strengthening of Facebook's DTBE, far outweigh any procompetitive effects [redacted] (and the facts as alleged in this complaint demonstrate that there are none). There are likewise no procompetitive effects that outweigh the anticompetitive effects of Facebook's extended API agreements and other Platform conduct, [redacted] conduct. There is also no legitimate, non-pretextual technical justification for Facebook's backend integration.

834. The net effect of Facebook's anticompetitive conduct was to inflate advertising prices, including the prices paid by Plaintiffs and the Classes. In the alternative, Facebook's conduct described in this complaint had the purpose and effect of achieving a dangerous probability of a monopoly in the United States Social Advertising Market.

835. All of this has resulted in sustained and increasing supracompetitive prices for Facebook advertisements. Each of the Plaintiffs (and the persons, entities, and companies in the proposed Classes) bought Facebook advertisements at supracompetitive prices inflated by Facebook's anticompetitive scheme.

836. Plaintiffs therefore were, and are, harmed in their business and property: they were overcharged for advertising as a result of unlawful, anticompetitive conduct by Facebook.

CLASS ACTION ALLEGATIONS

837. The Classes' claims all derive directly from a course of conduct by Facebook. Facebook has engaged in uniform and standardized conduct toward the class. Facebook did not materially differentiate in its actions or inactions toward members of the class. The objective facts on these subjects

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are the same for all class members. Within each Claim for Relief asserted by the class, the same legal standards govern. Accordingly, Plaintiffs bring this lawsuit as a class action on their own behalf and on behalf of all other persons similarly situated as members of the proposed class pursuant to Federal Rules of Civil Procedure 23(a) and (b)(3) and/or (b)(2) and/or (c)(4). This action satisfies the numerosity, commonality, typicality, adequacy, predominance, and superiority requirements of those provisions.

The Pre-2018 Nationwide Advertiser Class

838. Between October 1, 2012, and April 3, 2018, Facebook advertisers, including Plaintiffs Affilious, Jessyca Frederick, Joshua Jeon, and 406 Property Services were governed by materially common terms of service, which applied generally to both commercial and non-commercial Facebook accounts during this period.

839. Plaintiffs Affilious, Jessyca Frederick, Joshua Jeon, and 406 Property Services bring this action and seek to certify and maintain it as a class action under Rules 23(a); (b)(2); and/or (b)(3); and/or (c)(4) of the Federal Rules of Civil Procedure on behalf of themselves and a Pre-2018 Nationwide Advertiser Class defined as follows:

> All persons, entities, and/or corporations in the United States who purchased advertising from Facebook between December 1, 2016, and April 3, 2018, but not after April 3, 2018, and were thereby injured by anticompetitive price inflation in the Social Advertising Market (the "Pre-2018 Class Period").

840. Excluded from the Pre-2018 Nationwide Advertiser Class is the Post-2018 Nationwide Advertiser Class, Facebook, its employees, officers, directors, legal representatives, heirs, successors, and wholly or partly owned subsidiaries or affiliates; and the judicial officers and their immediate family members and associated court staff assigned to this case.

The Post-2018 Nationwide Advertiser Class

841. Between April 4, 2018, and the present, Facebook advertisers, including Plaintiffs Mark Berney, Mark Young, and Katherine Looper, have been governed by materially common terms of service, which applied specifically to "commercial" Facebook accounts during this period.

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842. Plaintiffs Mark Berney, Mark Young, and Katherine Looper, bring this action and seek to certify and maintain it as a class action under Rules 23(a); (b)(2); and/or (b)(3); and/or (c)(4) of the Federal Rules of Civil Procedure on behalf of themselves and a Post-2018 Nationwide Advertiser Class defined as follows:

> All persons, entities, and/or corporations in the United States who purchased advertising from Facebook between April 4, 2018, and the present, and were thereby injured by anticompetitive price inflation in the Social Advertising Market (the "Post-2018 Class Period").

843. Excluded from the Post-2018 Nationwide Advertiser Class is the Pre-2018 Nationwide Advertiser Class, Facebook, its employees, officers, directors, legal representatives, heirs, successors, and wholly or partly owned subsidiaries or affiliates; and the judicial officers and their immediate family members and associated court staff assigned to this case.

Numerosity and Ascertainability

844. Each class in this action satisfies the requirements of Fed. R. Civ. P. 23(a)(1). Thousands of persons, entities, and/or companies nationwide purchased advertising from Facebook in each of the Pre-2018 and Post-2018 Class Periods. Individual joinder of all Class members is impracticable.

845. The Classes are ascertainable because their members can be readily identified using Facebook accounts, Facebook Ads registrations, and other records and information kept by Facebook or third parties in the usual course of business and within their control. Plaintiffs anticipate providing appropriate notice to the certified Classes, in compliance with Fed. R. Civ. P. 23(c)(1)(2)(A) and/or (B), to be approved by the Court after class certification, or pursuant to court order under Fed. R. Civ. P. 23(d).

Predominance of Common Issues

846. This action satisfies the requirements of Fed. R. Civ. P. 23(a)(2) and 23(b)(3) because questions of law and fact that have common answers that are the same for each Class predominate over questions affecting only individual Class members.

847. Common issues include, without limitation, the following questions of law and fact for both the Pre-2018 and Post-2018 Nationwide Advertiser Classes:

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a. Whether Defendant monopolized the Social Advertising Market.

b. Whether Defendant, its employees or affiliates, intended to monopolize the Social Advertising Market.

c. Whether Defendant attempted to monopolize the Social Advertising Market.

d. Whether Defendant possessed monopoly or market power in the Social Advertising Market.

e. Whether user data and data obtained by third parties created a Data Targeting Barrier to Entry that protected Facebook's market position and/or monopoly, reduced competition or entry in the Social Advertising Market, and/or increased prices for products in that market, including, but not limited to, advertising sold to members of the proposed Classes.

f. Whether Defendant's agreements with whitelisted developers violated Section 2 of the Sherman Act, including whether the agreements restrained trade or strengthened the Data Targeting Barrier to Entry.

g. Whether [redacted], as described and alleged in this complaint, violates Section 2 of the Sherman Act;

h. Whether Defendant's [redacted] violates Section 1 of the Sherman Act;

i. Whether Defendant's [redacted], violates Section 1 of the Sherman Act;

j. Whether Defendant's agreement with Google to reinforce and bolster Facebook's dominance in the Social Advertising Market violated Sections 1 and 2 of the Sherman Act.

k. Whether Defendant's back-end integration is anticompetitive and violates Section 2 of the Sherman Act;

l. Whether Defendant's conduct harmed competition in the Social Advertising Market.

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m. Whether Defendant's conduct caused price increases or the reduction of consumer or developer choice in the Social Advertising Market.

n. Whether Defendant's unlawful conduct was a substantial contributing factor in the injury to members of the Classes.

Typicality

848. This action satisfies the requirements of Fed. R. Civ. P. 23(a)(3) because for each proposed Class, the identified Plaintiffs' claims are typical of the claims of other Class members and arise from the same course of conduct by Defendant. The relief that each Class's named Plaintiffs seek is typical of the relief sought for the absent Class members.

Adequate Representation

849. Plaintiffs will fairly and adequately represent and protect the interests of the Classes. Plaintiffs have retained counsel with substantial experience in prosecuting antitrust and consumer class actions.

850. Plaintiffs and their counsel are committed to vigorously prosecuting this action on behalf of the Classes and have the financial resources to do so. Neither Plaintiffs nor their counsel have interests adverse to those of the Classes.

Superiority

851. This action satisfies the requirements of Fed. R. Civ. P. 23(b)(2) because Defendant has acted and refused to act on grounds generally applicable to the Classes, thereby making appropriate final injunctive and/or corresponding declaratory relief with respect to the Classes as a whole.

852. This action satisfies the requirements of Fed. R. Civ. P. 23(b)(3) because a class action is superior to other available methods for the fair and efficient adjudication of this controversy. For each proposed Class, the common questions of law and fact regarding Defendant's conduct and responsibility predominate over any question affecting only individual Class members.

853. Because the damages suffered by each individual Class member may be relatively smaller than the costs of litigation, the expense and burden of individual litigation would make it very difficult or impossible for individual Class members to redress the wrongs done to each of them individually, such

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that most or all Class members would have no rational economic interest in individually controlling the prosecution of specific actions, and the burden imposed on the judicial system by individual litigation by even a small fraction of the Class would be enormous, making class adjudication the superior alternative under Fed. R. Civ. P. 23(b)(3)(A) for each of the proposed Classes.

854. For each of the proposed Classes, the conduct of this action as a class action presents far fewer management difficulties, far better conserves judicial resources and the parties' resources, and far more effectively protects the rights of each Class member than would piecemeal litigation. Compared to the expense, burdens, inconsistencies, economic infeasibility, and inefficiencies of individualized litigation, the challenges of managing this action as a class action are substantially outweighed by the benefits to the legitimate interests of the parties, the court, and the public of class treatment in this Court, making class adjudication superior to other alternatives, under Fed. R. Civ. P. 23(b)(3)(D).

855. Plaintiffs are not aware of any obstacles likely to be encountered in the management of this action that would preclude its maintenance as a class action. Rule 23 provides the Court with authority and flexibility to maximize the efficiencies and benefits of the class mechanism and reduce management challenges. The Court may, on motion of Plaintiffs or on its own determination, certify nationwide, statewide, and/or multistate classes for claims sharing common legal questions; utilize the provisions of Rule 23(c)(4) to certify any particular claims, issues, or common questions of fact or law for class-wide adjudication; certify and adjudicate bellwether class claims; and utilize Rule 23(c)(5) to divide any class into subclasses.

REALLEGATION AND INCORPORATION BY REFERENCE

856. Plaintiffs reallege and incorporate by reference all the preceding paragraphs and allegations of this Complaint, as though fully set forth in each of the following Claims for Relief asserted on behalf of the Classes.

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CLAIMS FOR RELIEF

COUNT I
Section 2 Sherman Act: Monopolization

857. Defendant has willfully acquired and maintained monopoly power in the relevant market for Social Advertising.

858. Facebook possesses monopoly power in the relevant market for Social Advertising. Facebook has the power to control prices or exclude competition in the relevant market.

859. Facebook's revenue share of the Social Advertising Market is approximately 80%; its share has been above 70% since 2015.

860. Defendant has willfully acquired and maintained monopoly power for Facebook in the relevant market for Social Advertising. As alleged in this Complaint, Defendant has accomplished this by means of predatory, exclusionary, and anticompetitive conduct, including but not limited to:

- the targeting of competitors for coercive Whitelist and Data Sharing Agreements on pain of denial of access to Facebook's Platform and APIs, including Facebook's Events APIs;

[redacted]

- entering into an anticompetitive agreement with Google to bolster and reinforce Facebook's dominant position in the Social Advertising Market; and

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- [redacted]

861. Defendant's conduct alleged here has had an anticompetitive effect in the relevant market for Social Advertising.

862. Defendant's conduct alleged here has no legitimate business purpose or procompetitive effect.

863. Defendant's conduct alleged here has had a substantial effect on interstate commerce.

864. Plaintiffs and the Classes have been and will be injured in their business or property as a result of Defendant's conduct alleged in this Complaint.

865. Plaintiffs and the Classes have suffered and will suffer injury of the type that the antitrust laws were intended to prevent by reason of Defendant's conduct. Plaintiffs and the Classes have been and will be injured by the harm to competition as a result of Defendant's conduct.

COUNT II
Section 2 Sherman Act:
Attempted Monopolization

866. As alleged in this Complaint, Defendant has engaged in predatory, exclusionary, and anticompetitive conduct, including but not limited to:

- the targeting of competitors for coercive Whitelist and Data Sharing Agreements on pain of denial of access to Facebook's Platform and APIs, including Facebook's Events APIs;
- [redacted]

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[redacted]

- entering into an anticompetitive agreement with Google to bolster and reinforce Facebook's dominant position in the Social Advertising Market; and
- [redacted]

867. Defendant's conduct alleged here has had an anticompetitive effect in the relevant market for Social Advertising.

868. Defendant's conduct alleged here has no legitimate business purpose or procompetitive effect.

869. Defendant has engaged in this conduct with the specific intent of monopolizing the relevant market for Social Advertising.

870. Defendant has engaged in this conduct with a dangerous probability of monopolizing the relevant market for Social Advertising.

871. Defendant's conduct alleged here has had a substantial effect on interstate commerce.

872. Plaintiffs and the Classes have been and will be injured in their business or property as a result of Defendant's conduct alleged in this Complaint.

873. Plaintiffs and the Classes have suffered and will suffer injury of the type that the antitrust laws were intended to prevent by reason of Defendant's conduct. Plaintiffs and the Classes have been and will be injured by the harm to competition as a result of Defendant's conduct.

COUNT III
Section 1 Sherman Act:
Restraint of Trade

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874. As alleged in this Complaint, Facebook knowingly and intentionally entered into an agreement to restrict trade in order to preserve the DTBE and protect Facebook's control of social advertising. This agreement, by bolstering and reinforcing Facebook's market power and dominance in the Social Advertising Market, had the purpose and effect of maintaining market divisions and/or segmentation, allowing Facebook to continue charging a significant price premium for its targeted advertising sold in the Social Advertising Market. Because of this agreement, no fungible level of targeted advertising would emerge that could rival Facebook's ad products.

875. Defendant's conduct alleged above is a *per se* violation of Section 1 of the Sherman Act, 15 U.S.C. § 1. Plaintiffs therefore do not need to allege a relevant market. To the extent a market must be alleged, Facebook's restraint of trade has had an anticompetitive effect in the relevant market of Social Advertising in the United States.

876. Defendant's conduct alleged here has no legitimate business purpose or procompetitive effect.

877. Defendant's conduct has had a substantial effect on interstate commerce.

878. Plaintiffs and the Classes have been and will be injured in their business or property as a result of Defendant's conduct alleged here.

879. Plaintiffs and the Classes have suffered and will suffer injury of the type that the antitrust laws were intended to prevent by reason of Defendant's conduct. Plaintiffs and the Classes have been and will be injured by the harm to competition as a result of Defendant's conduct.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs request that judgment be entered against Defendant and that the Court grant the following:

A. Determine that this action may be maintained as a class action pursuant to Rules 23(a), (b)(2), (b)(3) and/or (c)(4) of the Federal Rules of Civil Procedure, and direct that reasonable notice of this action, as provided by Rule 23(c)(2), be given to the Classes, and declare Plaintiffs as the representatives of the Classes;

B. Enter a judgment against Defendant in favor of Plaintiffs and the Classes;

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C. Award the Classes damages (i.e., three times their damages) in amount to be determined at trial;

D. Award actual, compensatory, statutory, and consequential damages;

E. Award equitable monetary relief, including restitution and disgorgement of all ill-gotten gains, and the imposition of a constructive trust upon, or otherwise restricting the proceeds of Defendant's ill-gotten gains, to ensure an effective remedy;

F. Award pre-judgment and post-judgment interest at the highest rate allowed by law;

G. Award Plaintiffs and the Classes their costs of suit, including reasonable attorneys' fees as provided by law; and

H. Award such further and additional relief as the case may require and the Court may deem just and proper under the circumstances.

JURY DEMAND

Plaintiffs demand a trial by jury on all claims so triable as a matter of right.

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Dated: February 28, 2022

Respectfully submitted,

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ATTESTATION OF YAVAR BATHAEE

This document is being filed through the Electronic Case Filing (ECF) system by Yavar Bathaee, who attests that he has obtained concurrence in the filing of this document from each of the attorneys identified on the caption page and in the signature block.

Dated: February 28, 2022

/s/ Yavar Bathaee
Yavar Bathaee