Ad Tech and the News

Background on the rise of surveillance advertising and its effects on journalism

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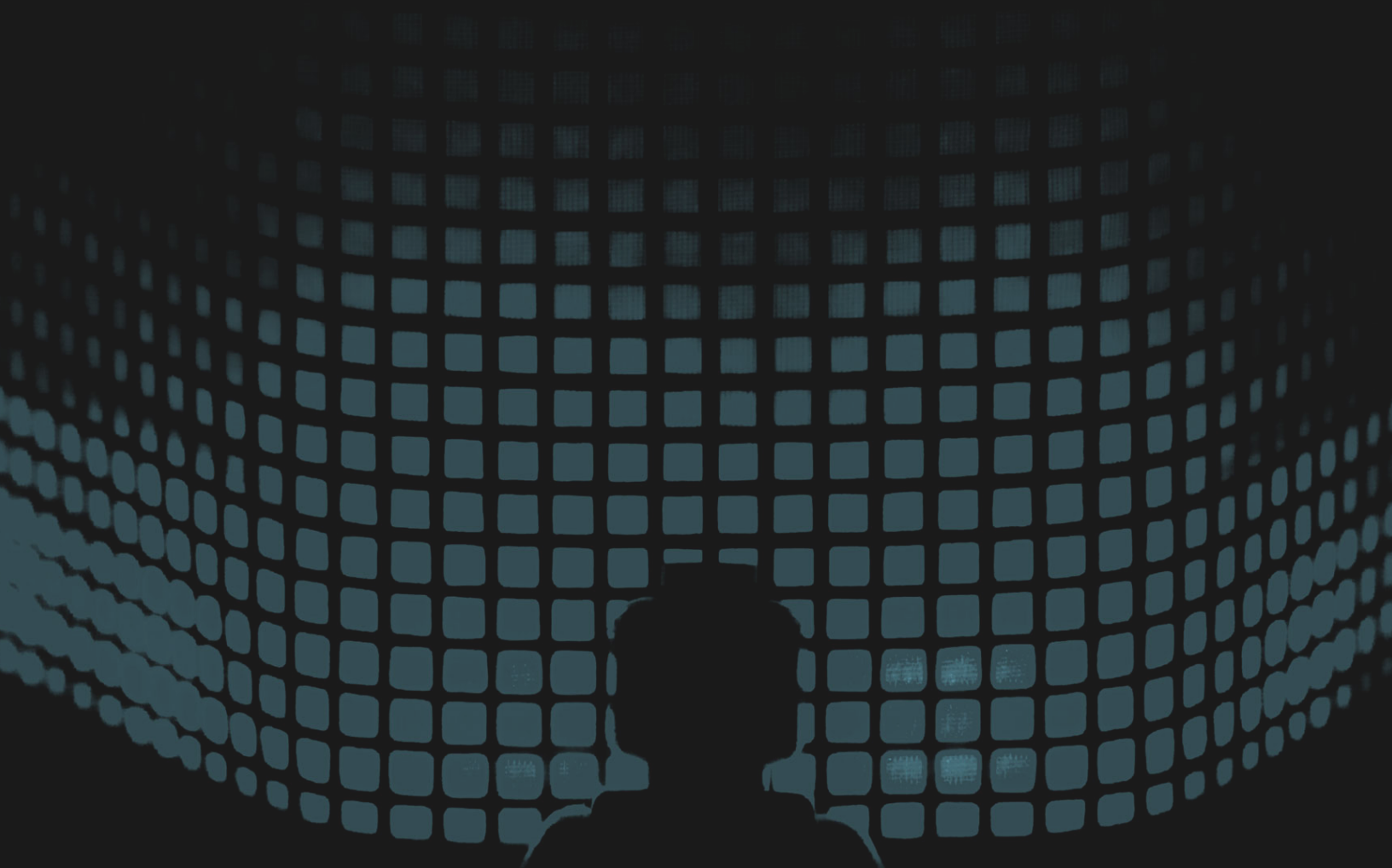

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Introduction

The dominance of Facebook and Google over advertising markets has lately become a highly salient issue. It is the subject of a wide-ranging investigation by the House Judiciary Committee. The issue figures similarly prominently in antitrust investigations underway by the Department of Justice and many state attorneys general. Many of these investigations, which may soon result in the filing of many antitrust suits against Google and Facebook, draw on extensive work by the United Kingdom's Competition and Markets Authority. The CMA found that Google holds a dominant position—as high as 90%—in every layer of the markets in which digital display ads are bought and sold across the open internet.[1]

Much is at stake in the outcome of these investigations, including the future of American journalism. The financing of a free press in the United States has long depended primarily on advertising revenue. Up until relatively recently, between 60% to 80% of newspapers' revenues came from advertising. Yet profound changes to the balance of power within advertising markets have led to newsgathering organizations receiving a declining share of the economic value they create when they invest in editorial content, while third parties siphon off more and more.

Initially, those third parties consisted primarily of a diverse assortment of "ad tech" firms that used digital technology and big data to attempt highly targeted internet advertising. These early efforts did not disrupt the business model for journalism and indeed helped to open up opportunities for new forms of media, such as blogs and digital magazines. In more recent years, however, these comparatively small, comparatively ineffective players have largely been displaced by giant platform monopolies deploying sophisticated algorithms and extremely powerful surveillance technologies. The rise of these platforms, primarily Google and Facebook, has not only highly concentrated the advertising sector of the economy; the platforms have severely damaged the financial viability of quality, independent, "non-fake" journalism.

This paper provides background to anyone seeking to understand the history of ad tech markets and how their inner workings have come to be dominated by Google and Facebook. Open Markets hopes this paper will provide thought leaders and policymakers with insights into how to roll back the Google/Facebook duopoly in advertising markets and how to restore the quality, scope, and financial viability of America's free press.

I. The American Tradition of Advertising-Supported Journalism

Advertising has been an important part of the business model of American journalism since the early 1800s, helping to finance a vibrant independent press with only minimal direct government subsidy or control. The symbiotic relationship between advertising and journalism deepened massively in the late 19th and early 20th centuries with the growth of national brands and mass circulation newspapers. In 1906, W.K. Kellogg placed his first ad for Corn Flakes in six newspapers. By 1915, he was spending $1 million a year.[2]

Facilitating this symbiotic relationship was the emergence of standardized measurement of audience size and competition. Independent audit bureaus of circulation formed so that advertisers would know how many consumers were being reached through newspaper and magazine ads. In 1929, a group of advertisers hired Archibald Crossley to measure specific radio programs to determine who was listening, how often, and for how long.[3] In 1950, A.C. Nielsen applied Crossley's model to television. Audit bureaus made possible efficient trade in advertising among media enterprises and marketers.

The heyday of advertising-supported journalism came in the 1950s and 1960s. Critics charged that the model corrupted newsgathering with corporate values and agendas, and, in the case of television, that it led to a "vast wasteland" of insipid content.[4] Yet though the model may have fostered *The National Inquirer*, *Stag*, and "The Flying Nun," it also sustained high quality, increasingly professionalized journalism. Marlboro ads paid for *Life* magazine's photojournalism and for Walter Cronkite's team at CBS News. Liquor and car ads made it possible for *The New York Herald Tribune* to support foreign bureaus and for Look magazine to pay promising young freelance writers a living wage. At a local level, auto dealers and local stores paid the salaries of local journalists working for locally owned newspapers, radio stations, and television stations.

The system in this era was organized in a three-tier structure. The first tier consisted of marketers. Some were large corporations with national consumer brands; others were regional or local stores or producers.

The second tier comprised publishers and other content producers: magazines, newspapers, radio stations, and television stations, both national

and local. Some enjoyed local monopolies, and many became affiliated with larger chains or networks. But strict enforcement of antitrust laws restrained concentration of ownership and market power, limiting, for example, the number of local radio or television stations that could be owned by any one entity or the ability of newspapers to discriminate against marketers who placed ads in rival media.[5]

Finally, there was a third tier of intermediaries composed of advertising agencies and supporting industries. This tier was centered in New York on Madison Avenue, as memorialized in the show "Mad Men." But local and regional advertising firms played large roles as well. For example, into the 1970s St. Louis had a vibrant ad industry serving St. Louis-based companies such as Anheuser-Busch and Ralston Purina and supporting local media such as the *St. Louis Post-Dispatch*.[6] Both national and regional advertising agencies employed "quants" to do market research and "creatives" to come up with effective ad jingles and slogans. The role of agencies also included figuring out which publishers could deliver the audiences that their clients most needed to reach, and then negotiating the appropriate ad sales.

The process allowed for the targeting of marketing messages, but only crudely. Reaching, say, high-income New York investment bankers might mean advertising in *Fortune*, even though most readers of that magazine were not high-income investment bankers, and many did not live in New York. Similarly, targeting car buyers in suburban Pittsburgh meant buying ads on local media, even though most of the people reached by such ads were not currently in the market for a car. Targeting gun enthusiasts, model railroaders, or contributors to liberal or conservative causes required buying ads across a crazy quilt of special-interest publications where such niche consumers might be found. The lack of precision targeting meant that lots of money had to be spent on advertising in order to generate a single sale—a feature that benefitted the financing of journalism and other editorial content.

Advertising in this era included brand marketing, which sought to induce demand for products through emotional appeals. Coca Cola, for example, spent millions in 1971 targeting the era's youthful counterculture with an ad campaign suggesting that buying Coke would "teach the world to sing in perfect harmony."[7] Similarly, brands such as Tiffany's used four-color ads in glossy upscale magazines such as *Vogue* or *The New Yorker* to associate their luxury wares with glamour and sophistication.[8] The effects of brand marketing were often hard to measure, but when such advertising worked, it was highly lucrative, creating "brand equity" that led to repeat customers willing to pay more for products because of intangible, subjective properties created by advertising.

Advertising in this era also included many direct pitches—particularly at the local level—that also generated substantial revenue for journalistic enterprises. Rival department stores competed with each other, for instance, by advertising competing Presidents Day sales in local media. Rival local grocery stores competed with each other by paying local newspapers to deliver their coupons. In every community, individuals also turned to local classified sections to advertise a job, garage sale, used car, or to rent out an apartment, thereby providing more revenue to support local journalism. Compared to brand marketing, the effects of these forms of advertising were easier to measure, but most money spent on advertising still went to reach broad market segments, not to the individuals most likely to buy. This "inefficiency" in targeting was again much to the benefit of journalistic enterprises living on advertising dollars.

EARLY INTERNET ADVERTISING

By the early 1980s, the amount of advertising dollars available to support journalism, particularly at the local level, began to be imperiled. Due to the lax enforcement of antitrust laws that began in this era, many local businesses, such as hardware stores and grocery stores, were displaced by large national chains such as Walmart. Similarly, many local department stores merged with another or went out of business.[9] The result was an accompanying decline in the number of firms competing to buy ads in many local media markets and an accompanying decline in the revenues available to support local journalism.

With the spread of internet access in the early 1990s, another major trend began emerging. In 1993, an online information portal called the Global Network Navigator began selling online ads, which were ad spots that users could click on. In 1994, AT&T paid $30,000 to the first commercial web magazine, *HotWired,* to place a small graphic next to the publication's written content.[10] In a rainbow font, the graphic asked the user, "Have you ever clicked your mouse right here? You will." Users who clicked on the ad were taken to a landing page for AT&T. *HotWired* was the first publication to build a business model of paying its writers by selling advertising online. The age of the banner ad had begun.

Traditional publishers understood how to sell these kinds of ads. The model for ad-supported publications had long been to sell "ad inventory," or the space set aside from editorial content that is available for advertisers to buy. Ad inventory can be anything from airtime on radio or podcasts to a full page in a newspaper. The banner ad model continued this paradigm.

But digital technology meant that banner ads had far more potential. Not only could they be used for conventional brand-building, but it was also possible to measure who actually responded to them. In 1996, Procter and Gamble cut a deal under which it only paid for its banner ad on Yahoo! when a user clicked it.[11]

Around the same time, two technologists created the corporation DoubleClick, which was a software company offering tools to advertisers and publishers.[12] Using DoubleClick's Dynamic Advertising Reporting and Targeting software, advertisers could change ads in live campaigns, replacing poorly performing ads with new pitches.

DoubleClick DART software also enabled publishers to serve ads in standardized formats. The company began brokering advertising, helping to match ad buyers with available ad inventory. Effectively, as Farhad Manjoo has put it, DoubleClick "organized millions of pages across the web into a network on which to systematically, aggressively, ceaselessly serve a standard size and format of ad."[13]

In this era, firms also began early, crude attempts at individual targeting. At Netscape, a programmer created what was known as an internet cookie, a technology that allowed third-party tracking of users on the web.[14] Around the same time, an ad agency called WebConnect began creating software tools to cap the number of times a specific user would see an ad.[15] Advertisers could now use "ad tech" to track individual users on the web and target them with specific ads.

In 1994, a company called Webcrawler indexed the entire web so that it could be searched via websites that came to be known as search engines.[16] Search engines such as AltaVista, Lycos, Excite, Inktomi, and Infoseek helped direct users by responding to queries with lists of relevant links. In so doing, search engines attracted eyeballs that advertisers wanted to reach—eyeballs all the more desirable if advertisers could target individual consumers according to the search terms they used. In a seminal paper in 1998, two young Stanford computer scientists, Larry Page and Sergey Brin, argued that search engines financed by ads were "inherently biased towards the advertisers and away from the needs of the consumer." When they soon afterward founded Google, they vowed not to accept advertising—a vow they would soon break, with enormous consequences for the world.[17]

The same year, Bill Gross at GoTo.com took ad tech to a new level. He introduced auctions and dynamic pricing.[18] With this model, advertisers could

bid at auctions to show their ads when users searched on key terms, and ads would be shown based on who was willing to pay the most for a click. Whoever was willing to pay the most, went the thinking, valued the user the most.

By the middle of the 2000s, the online advertising and publishing markets had matured into a viable mainstream medium. Most Americans were now online, and more than four in 10 adults had access to broadband at home.[19] New media forms, such as blogging, attracted new audiences by focusing on regional and niche interests. Meanwhile, legacy newspapers such as *The New York Times* had lost traditional classified advertising to new digital competitors such as Craigslist, but they also built digital editions and spinoffs that were successful in attracting both news consumers and advertisers.[20]

Thus, despite the vast spread of digital communications technology, the economic viability of much of traditional journalism remained intact, while space opened for innovation in new media. Large publishers, whether online or not, sold ad inventory to advertisers both directly and through advertising agencies. And just as smaller and medium-size print publications had always done, their digital counterparts used ad networks to band together and reap benefits of scale. Though they could now use ad tech technology to better measure the effect of ads and to tailor how they appeared to different users, advertising seeking to reach a specific market segment still did so by buying ads in publications that had attracted specific audiences with specific editorial content. The reputation and reach of a publisher and the monetization of its media business thus remained linked, as they had been in pre-internet days.

THE RISE OF ADTECH

All this began to change in the middle of the 2000s. Technologists began constructing computerized systems that could gather highly detailed personal data about specific users and then allow advertisers to bid on the right to have specific messages put before those users as they traveled about the internet.

To enable this system of so-called behavioral advertising, publishers would allow third-party ad tech companies to place tracking software on their websites. Then these ad tech companies would, for example, allow SUV makers to engage in real-time bidding for the right to have an ad placed in front of any users whose travels around the internet suggested they were in the market for an SUV.

In 2006, Right Media launched the first exchange for behavioral advertising, using a feature known as Real-Time Bidding. RTB allowed for the automated matching of advertisers and ad inventory across multiple ad networks. To engage in the RTB market, ad buyers drew up a targeting list, typically using personal consumer data compiled on their own or from third-party data brokers. Once ad buyers had a list of which individuals (or kinds of people) they wanted to target, they would send their orders to a so-called Demand-Side Platform (DSP). The DSP is like an agent at an auction house, bidding on behalf of the ad buyers, only the agent is a computer.

The bidding started when an internet user opened a web page. The publisher's site instantly communicated to a so-called Supply-Side Platform a variant of the message "We have four empty ad slots for sale," along with user information on who is reading that web page, their demographic information, location, and so forth.

The auction for those spaces then began.[21] After the auction was completed a few nanoseconds later, the winning bidder sent its ad and filled the slot. In 2006, an enterprise version of Right Media was running 30,000 auctions per second.[22]

RTB promised advertisers something that traditional publishers could never offer. Advertisers could now pay to place an ad for, say, a Caribbean cruise in front of a consumer based not just on his or her membership in some mix of broad demographic categories but based on whether that consumer had been reading online articles related to Caribbean or cruise ship travel. And, at least in theory, these advances in ad tech allowed advertisers to engage in the holy grail of all marketing: price discrimination. By combining algorithms with personal data, marketers could price products differently for different customers, according to how much those customers had revealed online about their abilities and willingness to pay.[23]

Or so went the promise. It wasn't clear whether RTB advertising in this era was really more efficient or just a different pseudo-scientific marketing gambit.[24] Ad tech companies did not have access to the range of intimate personalized data that giant platforms such as Facebook and Google would later develop, and so their ability to allow advertisers to engage in "personalized pricing" and other forms of discrimination was comparatively limited. Moreover, it was not even clear how or whether these targeted ads were driving actual sales.

In 2008, a furious debate took place at the Interactive Advertising Bureau's (IAB) annual conference over the nature of online advertising. Wenda Harris

Millard, the incoming chair of the IAB, a trade group for the ad tech industry, attacked the new method of buying and selling advertising inventory through online ad exchanges. "We must not trade our advertising inventory like pork bellies," she said in the opening speech.[25]

Millard was the then-president of media for Martha Stewart Omnimedia and the former head of ad sales at Yahoo!, and she was opposing this model of ad buying focused entirely on reaching a large number of people without concern as to where their ads were placed. Millard was arguing that this was a foolish shift. An ad placed on *Playboy* and one placed on *The New York Times* might reach the same user, but the context and reputation of the publisher mattered for brand-building.

RTB advertising also eliminated the ability of advertisers to choose where their ads appeared, as well as the ability of publishers to control which ads showed up on their sites. RTB unbundled the audience itself into discrete users and unbundled the ad inventory from the publishers. Advertisers no longer had to go through *The New York Times* to reach a reader of *The New York Times*.[26]

II. The Rise of Google

The early ad tech sector was highly disruptive to the traditional relationships between journalism and advertising, and between publishers and readers or viewers, yet it still was not an existential threat. This would change with the rise of the two giant platform monopolies, Google and Facebook.

As previously mentioned, Google's founders were initially opposed to mixing search engine functions with advertising because of the inherent conflict of interest they saw when advertisers paid to be ranked high in listings.[27] Rather than be influenced by advertisers, Page and Brin's algorithm valued webpages based on how many people linked to those pages, and it produced excellent results.

Google engineers made an important second breakthrough shortly after the company was founded. Search engines required users to type in their search terms, and then the engines collected additional data in the form of what users clicked on. For years, this data was discarded as "data exhaust." But engineers at Google discovered that they could use data exhaust to improve their search engine algorithm. Google's technology began surpassing all competing search engines.[28]

Yet despite the technological superiority, Brin and Page could not find venture capitalists who would fund a business model without advertising. The company tried selling its technology to web portals. But as the dot.com crash began and as venture capitalists began putting pressure on the corporation to show a substantial financial return, Google began selling advertising impressions on its homepage.[29]

Soon afterward, it began offering Adwords, a list of text ads in a right-hand column separated distinctly from the search results.[30] Adwords used the same automated bidding system deployed by other ad tech players but made a key change. Rather than let the highest bidder win the highest placement, Google's Adwords system also took relevance into account. If a lower-paying ad generated more clicks than a higher-paying ad on Google, the lower-paying ad might still take the top spot.[31]

The company seemed to have found a happy medium: Its search results offered users exactly what they would find relevant, supplemented by ads that they would likely find interesting. To ensure that there would be no

confusion or conflicts, Google's results on its homepage were formatted differently than ads, clearly indicating which were search results and which were paid advertisements.[32]

By 2003, Google was the largest search engine site in the world,[33] but the advertising dollars it attracted did not depend on investing in journalism or any other editorial content. It depended on people using Google to find content developed and paid for by others. Yet the damage that Google's emerging business model would pose to the financing of free speech had only just begun.

APPLIED SEMANTICS AND ADSENSE

By buying a company called Applied Semantics in 2003, Google gained control of an ad tech product call AdSense.[34] With AdSense in hand, Google broke out of mere search and gained the ability to sell contextual advertising across the whole web.

Prior to AdSense, Google had sold advertising only on Google.com. With AdSense, Google offered independent publishers the ability to put Google-powered text ads on their websites, and if someone clicked on the ad, then the website proprietor would share the revenue with Google. Google could use its scale to make these ads work. Its large number of advertising customers enabled Google to sell the product quickly and made it more likely that Google could provide a suitable ad to show.[35]

Initially, many publications welcomed AdSense, because it allowed them to unload their least attractive advertising space.[36] They could still sell banner ads in the prime real estate at the top of a webpage to branded partners through direct sales. And they could use AdSense to sell the low-quality advertising space at the bottom of the page, known as remnants.[37] Selling off the remnants through AdSense seemed like free money. Better yet, since the advertising being sold through AdSense was mostly direct marketing pitches instead of brand-based ads, it didn't seem to compete with other ad sales.

During this period, AdSense, in combination with other competing digital ad networks, helped finance the emergence of new media as well as traditional niche publishers.[38] Blogs such as *Daily Kos* and *Talking Points Memo* emerged to take advantage of the new source of ad dollars, while legacy and specialized publications such as the *Washington Monthly* or *Outside Magazine* were able to transition from print to digital and still pay the bills.

But Google's control of AdSense also began to change the balance of power in media markets in important ways. AdSense, for example, helped Google acquire valuable data about user behavior across websites that inserted the AdSense code on their webpages. By 2007, the company was tracking 75% of all internet users through its AdSense content network.[39] This also meant that Google could Hoover up subscriber or visitor data that was once the proprietary property of individual publishers. Once, only newspapers knew who went where on their websites; now Google knew that, as well as much more about their readers' travels elsewhere on the internet. And if publishers objected, they had to fear the possibility that Google would steer its search engine users away from publishers' websites or cut them off from revenues earned through AdSense. Yet the publishers' loss of market power to Google was only beginning.

GOOGLE ACQUIRES ITS WAY TO DOMINANCE

Google would go on to acquire dominance over as many communication networks as it could. It did this both through mergers and through leveraging its power in one new area, such as mapping or email, to force its way into another.

In 2004, Google acquired Keyhole, the basis for what would become Google Maps.[40] This gave Google unrivaled data from users and businesses who used its mapping software, as well as from third parties who wanted to build specialized applications on top of Google Maps. In 2005, Google bought Android, a mobile phone operating system.[41] Google would gain visibility into the digital and physical movements of anyone with an Android phone, as well as the ability to extend its search monopoly into mobile search when it replaced desktop search.

It also acquired Urchin, a software product that analyzed server logs to help website proprietors analyze traffic.[42] Urchin became the basis for Google Analytics, which Google offered for free to anyone with a website—with Google collecting the data.[43] Analytics positioned Google as a more intrusive surveillance machine for millions of sites.

It also acquired Neotonic Software to help in the roll-out of Gmail, which allowed better tracking of individual consumer data. In 2006, it acquired YouTube,[44] which allowed Google to structure the nascent online video market and eventually to learn about the video-viewing habits of more than 1 billion users, as well as of hundreds of thousands of businesses and advertisers.

In 2007, Google made another key acquisition with the purchase of DoubleClick. Before this acquisition, DoubleClick had dominance in the internet display advertising market, including banner and other ads that encouraged users to click through to a landing page in order to take an action, such as making a purchase. DoubleClick provided the critical software tools to both publishers and marketers in the display ad markets, and it used those tools to amass a large store of proprietary data on how different ads and campaigns worked.[45]

This had made DoubleClick a natural competitor to Google. They each had relationships with large numbers of advertisers, enormous quantities of rich data, and partnerships with millions of sites across the web. What Google had done for text-based ads through AdSense, DoubleClick could do for display ads, and vice versa. Before the merger, Google was building a rival display ad service to compete with DoubleClick. But instead of building the competitive intermediation service, Google simply bought its rival.

The Federal Trade Commission reviewed the merger, and, in a controversial decision, it allowed the acquisition in December 2007, with one dissenting commissioner.[46] The merger radically concentrated power over the flow of information and advertising into the hands of a single network intermediary: Google.

Google eventually combined DoubleClick's data with its search and Gmail data into "super profiles," which enabled the company to more effectively identify people individually as they used digital tools.[47] A valid consumer ID is attractive to ad buyers, because if they know who the person is, then they can use other sources of data to see whether that person is a potential customer whom they would like to reach. Pricing power in ad sales comes from the ability to identify the individual seeing the ad.[48]

Now advertisers could run a campaign targeting individual users across Google's properties, such as its search engine, as well as an array of third-party media sites, all using Google's DoubleClick software and services. Google's search data and DoubleClick's browsing data meant that the company had an overwhelming advantage in behavioral targeting.

As an FTC official noted, "Type the search term 'apple' into the Google search engine, and Google will 'know' whether the user is focusing on food (apple recipes) or technology products (Apple computers), depending on which websites the user recently visited (Cooking Light versus MacWorld) as

well as what searches she recently conducted (Golden Delicious versus iPod). Subsequent search and display advertisements will be targeted to match these revealed preferences."[49] No one else had that level of knowledge over users. Google prohibited access to its stored data while demanding access to everyone else's.

Google also gained unprecedented knowledge of the market itself because it literally ran the market. Unlike the earlier advertising markets, in which independent third-party auditors such as Nielsen measured results, Google is the only one who knows who gets what in the third-party display ad market. This is in some ways analogous to Google controlling the New York Stock Exchange. In this analogy, the only way to trade stocks would be to use Google software, and Google would not disclose its brokerage fee, nor would it tell any other market participant the price anyone else paid or got for their stock.

At the same time, however, Google created an irresistible bundle for publishers. Publishers got DoubleClick publishing software at a very low price, and Google would manage their ad inventory for free. As a competitor put it, "Google gave publishers a free ad-serving tool and a revenue stream to go along with it."[50] This pricing made competition in ad tech increasingly difficult. Google would manage ad inventory at virtually no cost. But over time, it became clear that Google could begin dictating the terms and prices. It was as if Google was a stockbroker offering free stock trades but also keeping stock prices secret. The publisher might not pay upfront fees for ad inventory management, but Google could sell the publisher's inventory at the prices it chose and remit to the publisher whatever amount it decided to share.

As Google was building its power in the third-party display advertising market, the search market, and the market for online video, newspapers remained largely distracted and unconcerned. In the mid-2000s, they were largely concerned about the emergence of Craigslist, which had undercut their hold on lucrative, locally based classified advertising revenue. As Google's monopoly began to take shape in 2007-2010, the global financial crisis and the attendant collapse of advertising revenue overshadowed the shifts in the market structure. And the rapid shift to mobile after the launch of the iPhone provided a further distraction.

Over the course of the late 2000s and 2010s, Google acquired a dominant position in every layer of the RTB marketplace. It built powerful ad exchanges, analytics, advertising software, data management, inventory management,

LEVERAGING ANDROID INTO MOBILE SEARCH DOMINANCE

As is often the case, the most vulnerable time for a monopoly, as well as its moment of greatest opportunity, is at a technological inflection point when a new market structure is emerging. After 2007, the computing world started shifting to mobile. Users would search on their phones as much or more than they did on desktop computers, and they would include geolocation data and maps in those searches.

It was not clear at first how Google would make money in mobile, but Google figured it out. Google first bought a mobile phone operating system, Android, in 2005. In 2008, Google built its first Android phone. The company eventually cut deals with original equipment manufacturers (OEMs) such as Samsung, allowing them to use Android as the operating system for their phones for free. Google gave away Android, and, starting in 2012, it gave away Google Play, its app store, as well. Global Android phone usage hit 1 billion users in 2014, and 2 billion in 2017.[51]

Google imposed conditions on OEMs. It mandated that they put Google search on their phones, and forced OEMs to make Google search the default search engine. In some cases, the company also paid OEMs to not install competitive software.[52] These default choices are critical for controlling consumer behavior. Defaults are so important that Google pays $12 billion a year to Apple so that Google's search engine shows up as the default search on Apple's phones.[53] Google's tying of its Android and Play store to its default search was a leveraging of monopoly power, exporting dominance from its home market of desktop search into the destination market of mobile search.

In 2015, the European Union and the Russian Federal Cartel Office both sued Google for this leveraging play, and both the EU and Russia ended up winning. But, at least in Europe, it was too late. Google was a monopoly in mobile search, as it had been in desktop search.

TAKING THE MEASURE OF GOOGLE'S DOMINANCE

In 2017, France's national antitrust authority, the Autorité de la Concurrence, did a large-scale sectoral analysis that summed up the different mechanisms that Google uses to dominate the online ad market.

These include:

- Bundling intermediation services, such as advertising solutions, with targeting data;
- Bundling intermediation services with exclusive access to website inventory;
- Prohibiting the use of data on competing ad services;
- Providing data free of charge with the use of advertising services;
- Leveraging key positions in certain service markets to enable development on other markets;
- Impeding interoperability with rival AdTech solutions in the context of auctions for advertising inventory;
- Refusing transparency or verification of data transmitted by certain platforms.[54]

Google's other predatory behaviors include self-dealing, the favoring of its own content over that of other users on its platform. For example, Google now refers fewer than 50% of search queries to non-Google sites.[55] According to Sparktoro, Google self-deals even more aggressively in mobile search. In May 2019, 11% of searches resulted in a paid search click, a little more than twice as many as in 2017.[56] Searching on Google increasingly means being directed to Google's advertising customers.

This privileging of Google content is not limited to search. Through its Gmail service, Google segments bulk email from political or commercial institutions into a separate "Promotions" folder. It then places advertising that looks similar to such email at the top of the Promotions folder, reducing the ability of businesses, publishers, and political institutions to communicate with their users.[57] Google can suppress voices, regardless of whether they are a competitor, for any reason or for no reason at all.

Google uses its position as a platform to engage in other forms of discrimination against would-be competitors. The website Yelp, which specializes in reviews of local restaurants and the like, alleges that Google first copied its reviews and then artificially downgraded Yelp results in favor

of Google reviews.[58] More recently, European job-search companies have complained that Google privileges its own competitive product against theirs.[59] Foundem, a shopping comparison site, alleged a similar pattern of behavior.[60]

Google also uses tying arrangements to dominate the advertising market. If someone wants to buy certain types of YouTube ad inventory, then that would-be buyer must use Google ad campaign software.[61] Google also ties its data on people's search history to its demand-side platform for advertisers, which means that advertisers who use Google's ad buying software get access to its unrivaled data on what people are thinking. Google refuses to allow third-party ad software providers access to YouTube ad inventory, meaning advertisers cannot buy YouTube advertising except through Google Ads and Google's demand-side platform.[62] Google then takes a share of ad revenue sold on YouTube and a share of ad revenue bought through its demand-side platform.

Google also maintains its dominance by imposing restrictive terms on advertisers who buy ads through Gmail, Search, and YouTube. Advertisers are not allowed to use data they acquire from someone else to engage in targeting, nor are they allowed to share or sell ad data with other advertisers or AdTech firms. Google explicitly says, "If you operate a baby clothing site, you can't share your remarketing lists of visitors looking for baby clothes with an unaffiliated advertiser that sells baby strollers."[63] Google has a range of techniques to coerce advertisers, including suspension of accounts.

Google also makes it harder to use competitive products by hindering interoperability, except among its own products. Google AdTech products are wholly compatible with Google ad auctions, but non-Google products have "latency," which prevents them from fully participating in ad auctions.[64] Ad impression measurements are also more accurate if ad buyers and publishers are both using Google ad-serving software instead of third-party tools, ostensibly also due to latency.[65]

Finally, Google is so powerful that it can shape the advertising and journalism sectors—and by extension the web itself—through the implementation of standards or de facto standards. For example:

- **First Click Free**: For years, Google elevated publishers who allowed Google users to read content without a paywall. In 2017, *The Wall Street Journal* refused to allow Google search users to read its content for free, instead locating its content behind a paywall. Google

downgraded the status of the newspaper in its search rankings. While subscriptions went up, traffic to the newspaper dropped by 44%.[66]

- **Accelerated Mobile Pages**: Google has attempted to move the entire web onto its properties through a standard it created called Accelerated Mobile Pages, which allows faster loading by putting web content onto Google properties.[67]

- **Coalition for Better Ads and Ad Blockers**: Google has embedded ad-blocking technologies into its Chrome browser, which whitelists Google and Facebook advertising while blocking certain other kinds of advertising. It also blocks ad-blocking services that do not whitelist Google ads.[68]

- **Using Chrome to Attack Metered Paywalls**: In July 2019, Google updated its Chrome browser to make it difficult for publishers to detect whether a reader was using incognito mode. This undermined the use of metered paywalls, which offer readers a certain number of articles for free.[69]

III. The Rise of Facebook

In 2004, Mark Zuckerberg created Facebook, a Harvard-only social network where students could swap social information.[70]

Generally, more than two-thirds of Americans use Facebook to communicate with friends and family, and three-quarters of those users visit the site on a daily basis.[71] Globally, Instagram, Facebook, and WhatsApp, all owned by Facebook, have 2.2 billion users.[72] In some countries, Facebook isn't just a way to share social information—it is synonymous with the internet itself. People send roughly 100 billion messages every single day through WhatsApp and Messenger. Eighty million small businesses use Facebook to connect to customers. In the first three months of 2018, the corporation had $12 billion of revenue, up 49% from the previous year. Facebook has 77% of mobile social networking traffic in the United States.[73]

Facebook, like Google, is a set of communications networks. It is also a closed communication network, meaning that it is not interoperable with other networks. Users can, for instance, use a Verizon phone to call someone who uses AT&T, or Gmail to reach someone who uses Yahoo! Mail. However, if a user wants to share social information with a Facebook user, the user must use Facebook.

Facebook does not profit by facilitating communications among users, but by manipulating those users into seeing paid communications. As Mark Zuckerberg put it to Sen. Orrin Hatch, "we sell ads."[74] He might have added that Facebook is largely a mobile app ad company; 92% of its revenue comes from mobile ads.[75]

Facebook operates in a different targeted advertising market from that of Google.[76] Google's ads solve a specific problem for marketers, which is how to put your message in front of people explicitly searching for related information. Facebook also uses extensive surveillance to target ads, and much of its revenue is tied to how well it accomplishes that objective, but it also has the ability to approximate the primacy of brand advertising in print media and television.

Like the ads in a high-fashion magazine, Facebook blurs the distinctions among advertising, paid content, and unpaid content. Instagram ads and Instagram user photos are optimized for beauty, while Facebook ads and

posts are optimized for social engagement and brand management. As one advertising executive told us, Facebook is "almost a set designer" with "very effective space management." The company has "massive computational excellence in deciding where each pixel goes" to maximize engagement with paid content. This includes the use of neuroscience, usage of color and alerts, and the use of grouping technologies to keep users addicted through psychological triggers and a fear of missing out.[77]

Facebook integrates branded content into the user interface of its social network. Examples include "boosted posts" that look like Facebook entries that users can like and share, or video display ads that take over the entire phone screen.

Its ads are often a variant of what one would find on television. For example, Facebook lists one of its success stories as a standard Doritos promotional campaign.[78] As a user is using his or her Facebook or Instagram app, the company shows a 7-second video ad from Doritos across most of the screen. The ad is a Doritos Blaze bag falling onto a patch of snow, which then melted upon impact. The corresponding text overlay encouraged viewers to try the new chips by inviting them to "Make your taste buds sizzle with the intense flavor of new Doritos Blaze." The metrics of success were audience reach and brand awareness. Facebook helped the advertiser target relevant audience members and then measure impact with its audience tools and vast troves of data.[79] The goal is to take market share from the TV ad market, which was at $71 billion in 2018.[80]

EARLY BUSINESS MODEL CHOICE

Facebook was not the first social network. In 2003, Friendster and MySpace both allowed users to share profiles, photos, music, and videos. MySpace built on top of previous online community structures, such as AOL Instant Messenger, which had nascent social networking features such as status messages and contact lists, as well as Xanga, SixApart, and LiveJournal.[81] Unlike the creation of a medium such as email or the fax machine, the regulatory environment of the 2000s that birthed social networking encouraged the attempt to privatize standards. Social networks weren't interoperable and weren't competing within the market, but to control the market.

Zuckerberg did not at first envision Facebook selling advertising. His strategic insight in structuring Facebook's initial business model was "the social graph," or the mathematical representation of people's connections with each

other and businesses. "People already have their friends, acquaintances, and business connections," he said. "So, rather than building new connections, what we are doing is just mapping them out."[82] Unlike Google, Facebook wasn't going to map the web; it would allow users to map their social worlds using Facebook.

Initially, Facebook competed for users with MySpace not by offering a lower price, as both were free for users, but by offering more privacy features. As legal scholar and former advertising executive Dina Srinivasan pointed out, Facebook's first privacy policy in 2004 was easy to read and explicitly promised not to use the common web tracking technology of cookies to surveil users.[83] This was explicitly oriented around competition with MySpace. As The New York Times noted in 2006, "Facebook … has positioned itself as the safe social-networking alternative. It has generally gone to greater lengths than rivals to keep adults and under-age users apart, at first allowing only college and high school students to join the service, and then largely restricting online communication to users at the same school."[84]

But in the summer of 2006, growth at Facebook stalled out at 8 million users, versus 100 million for MySpace.[85] It had restricted membership to college and high school students but had been unable to significantly move high schoolers from their use of MySpace. Yahoo! offered $1 billion for the company and then cut the offer to $800 million. Zuckerberg responded to this competitive environment with three changes.[86]

First, the company released Newsfeed, which automatically broadcasts user activities to everyone in their networks.[87] A few days later, Facebook opened up membership to anyone. User growth jumped dramatically, and users spent more time on the site. Finally, in May 2007, the corporation opened itself up to becoming a platform, allowing third-party companies to build applications, with distribution across its social graph (what it now called its "open graph" for the web). Facebook would become more than a social network; it would organize the web itself.

These three choices launched Facebook on a massive growth trajectory. The Newsfeed, with its automatic broadcasting of what users had thought was private information, generated a backlash, including boycotts. "The New Facebook is too... well, creepy," said one student. "It just makes too much information visible."[88] But Zuckerberg ignored the backlash. He provided an opt-out feature, and users quieted down.

The Newsfeed feature set an important template for the company: the focus on control of user attention. "News Feed brought interesting things to people's attention quicker, so they looked at more content," said Zuckerberg.[89] In 2009, the company would roll out the Like button, an addictive feature allowing users to offer validation on a specific post.

The creator of the Like button expressed his regret in 2017, calling the validation "bright dings of pseudo-pleasure" and expressing concern over distraction and addiction.[90] Eventually, Facebook would build laboratories for neuroscientists to conduct research. "A lot of what we don't understand is where people's eyes are going when they're on the platform," said Facebook's director of advertising research. "We know how much time people are spending on the platform, so this is really about how that time is spent and what features on our product they're looking at."[91] In 2006, Newsfeed was critical to keeping users on the platform.

Similarly, the open graph platform strategy interwove the company into the fabric of the web. "We want to make Facebook into something of an operating system so you can run full applications," said Zuckerberg.[92] "What people really want is one online identity to do all these different things," his co-founder and partner Dustin Moskowitz said about the change. "What users wanted was the long tail of applications."[93] Investment poured into Facebook apps; a venture capital firm, Bay Partners, dedicated an entire fund just to Facebook applications. "These guys are creating the opportunity to build Adobes and Electronic Arts and Intuits that live within Facebook," said one of the co-founders of PayPal.[94]

And yet, even as Zuckerberg saw Facebook as a platform, the company could not find a way to sustain itself except through advertising. In 2006, the company sold a stake in itself to Microsoft, creating an alliance under which Microsoft committed to $100 million of banner advertising a year on the site.[95]

COLONIZING THE WEB: LIKE AND SHARE BUTTONS

To build on its momentum, in November 2007, the company launched its Beacon feature, which was an attempt to further embed itself into the fabric of the web. This was an attempt to bring the rest of the web into the Newsfeed. Facebook gave third-party sites snippets of code to embed on their webpages, and then actions on those sites would be broadcast onto Facebook. A person's Facebook friends would then be told what he or she had purchased or posted on sites such as fandango.com, yelp.com, and nytimes.com.[96]

The company also launched a Facebook Ads platform, allowing third-party advertisers to buy ads on the site. Users could learn about brands and businesses through referrals by friends, and advertisers could create Facebook pages.[97] That year, the company launched a mobile app for users of the new iPhone. Over the next few years, Facebook improved its ad platform, enabling geographic and language-based targeting and self-serve ads.[98]

The corporation ran into its first significant privacy problem with its attempt to embed itself into the web; Beacon quickly became a scandal. With obviously inadequate notification features, users were confused and angry that their behavior had been tracked and broadcast to their friends. One famous victim was a man who tried to surprise his fiancée with a marriage proposal, only to have his surprise proposal announced through Beacon upon his purchase of a diamond ring.

When third parties began dropping out of Beacon, Facebook backed off the program. But it was an important moment, because Facebook had explicitly broken its promise not to track users and then lied about its tracking practices after being caught.[99] Facebook's deception in service of growth and third-party data, as well as the corporation's disingenuous promises to not repeat the mistakes, set a template that continues to this day. The corporation even went so far as to offer users the right to vote on future privacy policy changes, though it later reneged on the promise.[100]

In 2010, Facebook allowed third-party websites to place "Like" buttons on articles and content.[101] "Social plugins," such as Like and the login feature, increased traffic by up to 200%. Fifty thousand sites added Facebook social plugins within the first week of availability.[102] They also enabled Facebook to track users across the web, although the company pledged that it would not incorporate browsing behavior on these third-party websites to aid

its advertising targeting.[103] Facebook's chief technology officer said the next year, "We don't use them for tracking, and they're not intended for tracking."[104] The next year, however, Facebook filed a patent for a method allowing the tracking of "the activities of users of a social networking system while on another domain." [105] In 2012, *The Wall Street Journal* found that Facebook tracking technology appeared on two-thirds of the websites it surveyed.[106] The same as Google, Facebook could now use its access to user behavior across the web and link it to individual consumer IDs.

MOBILE AD STRATEGY

From 2009 to 2014, Zuckerberg faced a critical set of choices about what kind of business model to adopt. His growth strategy had worked, but one business model choice—having Facebook operating as an underlying platform for third-party applications—wasn't generating sufficient revenue. The movie "The Social Network" came out in 2010, reflecting negatively on the founding of the company. On June 28, 2011, Google launched its competitor to Facebook, Google Plus. And that year, Facebook's long history of deceptive tracking practices brought forth the ire of the Federal Trade Commission. In a 2011 consent decree, the FTC settled with the company over charges that Facebook had engaged in a variety of deceptive acts, including lying to users about the extent to which Facebook shared data with app producers and advertisers.[107]

In 2012, the company hit 1 billion users, but it also faced more setbacks. It went public in a disappointing IPO. Zynga, an online gaming company that provided 15% of Facebook's revenue, suffered severe losses, causing significant doubts as to whether the company's strategy of becoming a platform could work.[108] And the environment shifted, as user behavior moved to mobile devices from the desktop. After Zuckerberg's first investor call, the stock dropped by 11% as the company reported a $743 million loss (even though it was cash flow positive).[109]

Internally, the company debated its strategy. As early as 2008, moderators at the company recognized problems with hate speech and disinformation.[110] In 2012, Zuckerberg mused on the company's reliance on ad revenue and considered the possibility of creating a subscription service similar to that of Amazon Prime.[111] Chief Operating Officer Sheryl Sandberg, hired in 2008, believed that adequately policing the platform was impossible and pushed for the company to avoid subscriptions in favor of advertising, which she believed brought the highest margin.[112]

The company made a series of experiments and choices. It attempted to build a payments system and paid gambling, which didn't generate sufficient revenue.[113] In 2011, the same year as the FTC consent decree, investors began demanding a mobile ad strategy.[114]

Facebook reacted aggressively. The company invested in its mobile Facebook app and began buying purchasing-habit data. It created an ad exchange allowing advertisers to bid against each other based on the demographics of the user seeing the ad. It set up its own in-house creative teams and began showing advertisements in the Newsfeed. Facebook had an ad product that most mobile app creators did not, which was a very large audience, consumer IDs on everyone in it, and a way to show them compelling, rich advertising.[115]

But it also used raw power. According to one of the developers who relied on the Facebook platform Six4Three, Facebook began selectively cutting off access to data to developers unless they bought mobile advertising.[116]

By 2012, Facebook blurred the line between ad content and user generated content. The goal was to show a lot of mobile ads to users based on behavioral targeting. "We thought of Newsfeed as a marketplace for attention," said Andrew Bosworth, who designed Facebook's ad system by mixing organic and paid content together. Bosworth began noting "how easy it was for us to make money." He told *WIRED* magazine, "It was just like, if we ever wanted to make more money, we would just pull the lever and put more ads in the pixels."[117]

Starting in late 2013, Facebook engaged in a new strategy. The corporation began cutting the reach of "organic" or unpaid posts. This meant that businesses could no longer reach fans who had asked to be subscribed unless they paid Facebook for the privilege.[118] As Sam Biddle on *Valleywag* put it in early 2014, "Facebook pulled the best practical joke of the internet age: the company convinced countless celebrities, bands, and 'brands' that its service was the best way to reach people with eyeballs and money. Maybe it is! But now that companies have taken the bait, Facebook is holding the whole operation hostage."[119]

Facebook then further perfected its data-heavy ad model. In 2013, it bought a company called Atlas from Microsoft, which allowed its advertising products to more effectively determine whether a brand campaign had "closed the loop"—this is, resulted in more purchases.[120] It also released a tool called Pixel, which allowed marketers to send advertisements to Facebook users who had visited their sites, a practice known as retargeting. And it created its

Lookalike Audience feature, allowing advertisers to upload information about their preferred audience and have Facebook's algorithm automatically try to target users that had the appropriate demographic qualities.

Finally, it launched the Facebook Audience Network, a third-party ad serving network. Publishers could now allow Facebook to sell their mobile ad space, matching it with Facebook targeting data, and using formats designed to blend the difference between organic and ad content. FAN positioned Facebook as an intermediary between publishers and ad buyers, as well as a competitor. By the end of 2015, the FAN product was the second biggest mobile ad network behind Google, taking in $1 billion in the fourth quarter. It later expanded from mobile apps to ads within mobile websites.[121]

Facebook's mobile ad strategy worked. In 2012, the company earned 11% of its revenue from mobile ads.[122] In 2013, as Facebook began deploying a mobile-ad strategy, mobile ads comprised 45% of its total revenue, the number of ads jumped 20%, and its price per ad increased by 36%.[123] In 2014, as the hostage-taking strategy kicked in, Facebook's price per ad jumped by 173%, with mobile ads accounting for 65% of the corporation's total revenue of $12.46 billion.[124] It subsequently raised prices per ad every year. By 2018, 92% of the company's $55 billion in revenue came from mobile advertising.[125]

In this era, Facebook was also engaging in extortion-like behavior toward publishers, who had built their businesses under the assumption that Facebook would not abuse its gatekeeping power. Take the story of *Women You Should Know,* an online magazine about women's empowerment. In 2011, two women structured their media business around Facebook, accumulating a fan base with hundreds of thousands of followers who eagerly clicked on the content shared by *Women You Should Know*.

When Facebook changed its algorithm to emphasize engagement so it could show users more ads, *Women You Should Know* suffered. Facebook manipulated the content that its fans received, often emphasizing negative stories that would incite anger and undercut the brand. Then, in 2018, Facebook downgraded the ability of *Women You Should Know* to get its content to fans. This was part of Mark Zuckerberg's decision to emphasize more content from family and friends, which undercut a vast swath of publisher businesses that had come to depend on reaching readers through Facebook.

Women You Should Know sought financial help from its fans. But as Open Markets Director of Enforcement Strategy Sally Hubbard wrote, Facebook buried all *Women You Should Know* posts with the word "contribute" or "donate" in them. Facebook, Hubbard wrote, "had vertically integrated into fundraising, and in order to get donations to show up in followers' feeds, Jen and Cynthia needed to use Facebook's own fundraising feature."[126]

CEMENTING MOBILE DOMINANCE THROUGH ACQUISITIONS

Facebook also reinforced its dominance in social networking by buying its competitors and surveilling its rivals. In 2012, Facebook acquired the fast-growing mobile photo-sharing app Instagram for roughly $1 billion, which the FTC cleared unanimously.[127] In other eras, this acquisition would have been considered an illegal horizontal merger, because Zuckerberg bought the company because he saw it as a competitive threat to his social networking business.[128]

In 2013, it acquired a company called Onavo, allowing it granular access to how people used rival apps such as Snapchat.[129] In 2014, Facebook acquired the secure communications messaging service WhatsApp for $19 billion. WhatsApp had been a popular app used by large numbers of people around the world to send private text messages to one another, and as such was a potential competitor to Facebook Messenger.

By 2014, Facebook had the three key properties on mobile: Facebook, Instagram, and WhatsApp. That year, the company announced that it would begin incorporating into its ad targeting data from third parties acquired via its social plugins and from various tracking technologies.[130] The company had become the dominant mobile ad purveyor for branded content. As one brand manager put it, "They have solved some of the biggest problems in digital advertising, one of them being mobile."[131]

But problems that emerged early in the business model of the social network have remained and strengthened. The company exhibited little interest in complying with the law or in preserving integrity in the markets it dominates. For instance, in 2016, Facebook stopped ad blockers from working by simply using identical markers for advertisements and organic content, earning a little more than $700 million from the middle of 2016 to 2017.[132] In 2016, Facebook announced that it would combine WhatsApp and Facebook data for ad targeting purposes.[133] This was a direct contradiction to what the corporation had told European regulators, who issued a $122 million fine to

Facebook for misleading statements on whether it could match Facebook and WhatsApp user accounts.[134]

In 2019, the company settled a sweeping investigation by the FTC for a $5 billion fine. The FTC alleged a number of violations of the corporation's 2011 consent decree. Facebook had deceived its users by allowing third-party apps to use their personal data despite privacy settings that suggested their data was private. The corporation had failed to implement a comprehensive privacy program, failed to vet third-party developers, served ads based on phone numbers users had provided for security purposes, and lied about facial recognition software.[135] The FTC has acknowledged that Facebook is now under an antitrust investigation.

TAKING THE MEASURE OF FACEBOOK'S DOMINANCE

Today, Facebook's monopoly power has many measures, including its ability to raise prices. From 2017 to 2018, Facebook increased the number of ads delivered by 22% and increased its price per ad by 13%. Average revenue per user in the U.S. increased by 24%.[136]

Facebook's dominance is also measured by its power as a platform to favor its own products over those of other content providers using its platforms. In November 2016, the Capitol Forum tested Facebook browser load times and found that Facebook's technology choices led to the privileging of Facebook content over external content.[137]

To suppress competition, Facebook has also prevented developers from using its social networking tools. In 2012, Twitter created Vine, which allowed users to display 6-second videos. Facebook immediately blocked Vine users from accessing their Facebook friends.[138]

Facebook's power also extends to exercising significant control over the format choices of content producers. In 2016, Zuckerberg encouraged a pivot to video among publishers by telling them that within five years, most content on Facebook would consist of video. As *Vanity Fair* put it, "In response, advertisers and publishers alike began pouring resources into video, at times firing entire teams of writers to instead hire producers to string together short-form, 'snackable' video content."[139] Two years later, advertisers learned that Facebook had allegedly falsified the numbers on user eagerness to consume video content, to inflate the viewing time of video ads.[140] Without third-party auditing, there's little recourse for advertisers or publishers.

Finally, Facebook's monopoly power gives it the ability to exercise a form of direct power over America's journalists and publishers. In 2018, *WIRED* magazine ran a story with a picture of a bruised Mark Zuckerberg on its cover. Shortly thereafter, as *WIRED* editor in chief Nick Thompson wrote, "traffic from Facebook suddenly dropped by 90 percent, and for four weeks it stayed there. After protestations, emails, and a raised eyebrow or two about the coincidence, Facebook finally got to the bottom of it. An ad run by a liquor advertiser, targeted at *WIRED* readers, had been mistakenly categorized as engagement bait by the platform. In response, the algorithm had let all the air out of *WIRED's* tires. The publication could post whatever it wanted, but few would read it. Once the error was identified, traffic soared back."[141]

Thompson made the point clearly: "Every publisher knows that, at best, they are sharecroppers on Facebook's massive industrial farm. ... And journalists know that the man who owns the farm has the leverage. If Facebook wanted to, it could quietly turn any number of dials that would harm a publisher—by manipulating its traffic, its ad network, or its readers."[142]

III. Conclusion

Today, American democracy is in crisis. There are many causes, but one large and often overlooked factor is the damage that the Google/Facebook advertising duopoly has done to the financial viability of a free press. Many are tempted to try to save our failing Fourth Estate by looking for subsidies from government agencies or philanthropies. While such institutions must play an important role, making the financing of free speech dependent on them brings its own threats to liberty and democracy. Fortunately, as will be documented in forthcoming work by the Center for Journalism and Liberty, ample opportunities exist to use both new and traditional antitrust policy tools to break up and defang this duopoly, and to thereby help ensure that Americans get the vibrant, diverse, independent, and noisy press we need and deserve to secure our freedoms.

About

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