INFORMATION POLLUTION & THE PUBLIC DISCOURSE

Max Levy*

Whether it is misinformation or death threats, hate speech or spam, foreign election interference or incoherent Facebook posts from a distant uncle, our public discourse suffers from information pollution: a haze of content that diminishes our capacity to foster the informed public necessary for a healthy democracy.

That observation, of course, is not original. Scholars have written countless pages on the topic through the lens of Section 230, the First Amendment, antitrust, privacy regimes, algorithmic transparency, information fiduciaries, the Fairness Doctrine, and more. But each of these policy proposals inevitably focuses on a narrow slice of the problem, leaving readers to contextualize it within the bigger picture themselves. Unfortunately for such readers, no bigger picture exists within the current literature; there simply is no framework that puts these diverse proposals in conversation with one another. We are left with a box of puzzle pieces but no sense of how they fit together, or even if they do.

This paper puts this interdisciplinary puzzle together. Drawing on literature across a variety of siloed fields: media studies, journalism, tech entrepreneurship, and the legal regimes governing speech, privacy, and competition. It puts forth an original systems map that explains in four parts how our country ended up with such a polluted public discourse:

(1) How our society transitioned from a public discourse mediated by journalists to one mediated by platforms;

(2) How the shift to a platform-based public discourse undermined the traditional defenses embedded in the news media that used to filter information pollution;

(3) Why the public discourse has consolidated onto a few massive platforms, and why information pollution proliferates so broadly on them; and

(4) Why platforms have seemingly been unable to clean up the crisis themselves.

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* Max Levy earned his J.D. from Stanford Law School and M.M.C. from the Walter Cronkite School of Journalism and Mass Communication. I want to thank Paul Brest, Daphne Keller and Jacob Schlesinger for their encouragement and helpful feedback, as well as the student editors at JOLTT for their hard work in publishing this article. The views and opinions expressed in this publication are those of the author.

The paper concludes by illustrating how the systems map can serve as a unifying framework for lawmakers and policy advocates seeking to improve our public discourse. Specifically, it helps them see what elements of the system a given policy proposal targets, how that proposal would change the public discourse relative to other proposals, and how likely it is that the policy proposal will accomplish its stated goals.

Ultimately, this paper uses a novel approach to bring order to the crowded and chaotic debate around platform regulation and public discourse. Rather than explain or advocate for any single policy proposal, it provides a unifying framework that shows how they can complement one another in a multi-pronged, comprehensive regulatory regime capable of meeting the complexity of the challenge.

TABLE OF CONTENTS

INTRODUCTION

Newspapers in driveways. The idea is so quaint that it now feels impossible. But throughout the 20th century and into the opening decade of the 21st, if you wanted to know what was going on in the world, or even just in your county, you signed up for the delivery of your local newspaper. It was tossed to your doorstep at dawn from a slow-moving truck or, better yet, a bicycle. Milkmen faded early, but paperboys? They persisted—until suddenly, they did not.

In this paper, I refer to that bygone world of newspapers in driveways as the publisher-based public discourse: an arrangement our society stumbled into, in which journalists mediated our understanding of the world. The world that replaced it—our world—is the platform-based public discourse, in which social media companies mediate that understanding. This paper is about how that transition took place, why an epistemological crisis has emerged across

our society as a result, and what we can do about it. Admittedly, much has been written about these topics in recent years. But each entry inevitably focuses on a narrow slice of the problem, leaving the reader to contextualize it within the bigger picture. Unfortunately for the reader, no bigger picture exists; we are left with a box of puzzle pieces, but no sense of how they fit together. This paper's contribution is that it puts the puzzle together. Specifically, it offers a systems map (the "Map") that provides a unifying framework for lawmakers, regulators, and policy advocates seeking to improve our platform-based public discourse.[1]

The Map makes sense of a crowded and chaotic debate around platform regulation and the public discourse: Section 230 and the First Amendment, antitrust and privacy regimes, algorithmic transparency, information fiduciaries, the Fairness Doctrine, and more. Everybody understands that no individual approach is a silver bullet. But without a unifying framework, it is challenging to understand how different regulations might complement one another to create a regulatory regime that comprehensively combats what this paper refers to as "information pollution": the haze of false, misleading, extreme, offensive, spammy, and generally low-quality information that diminishes our capacity to foster the informed public requisite to a healthy democracy.

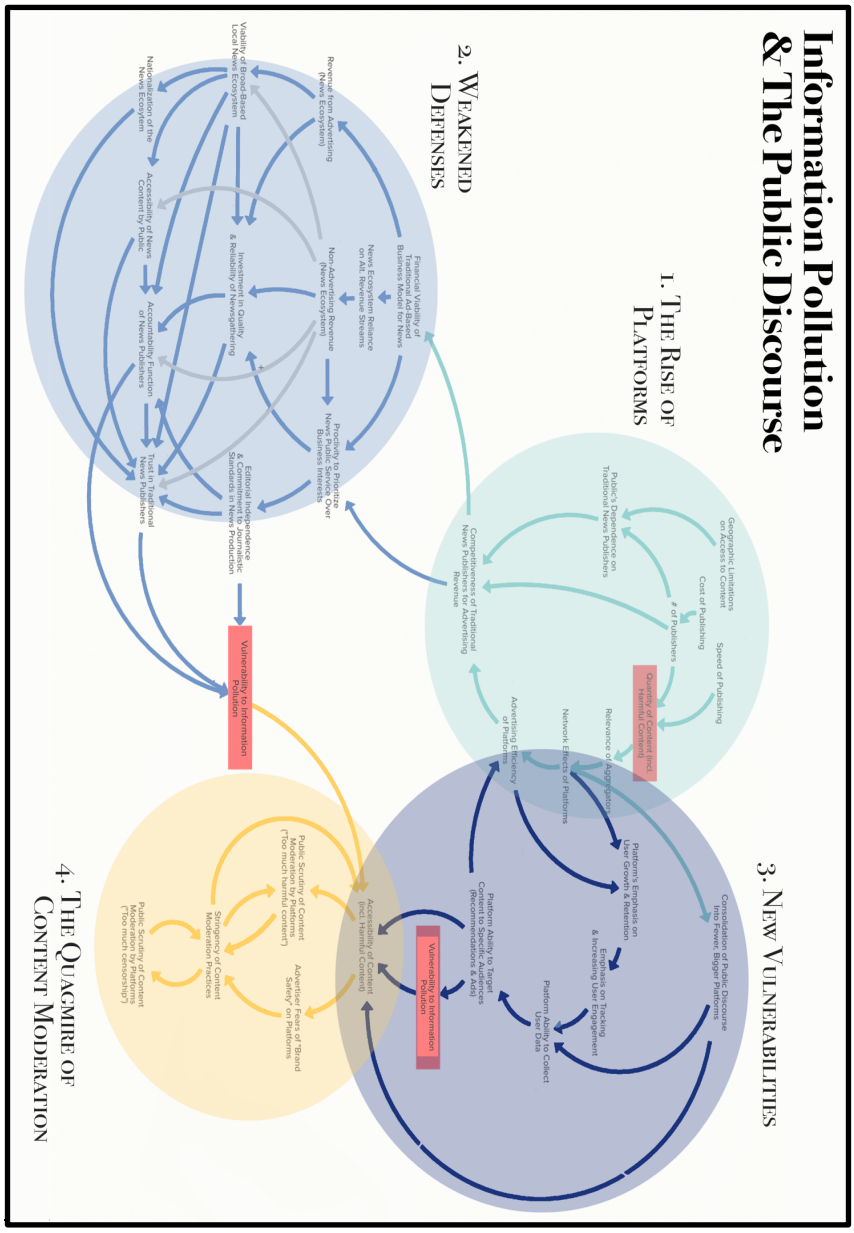
The Map provides that framework. Mapping out the information ecosystem—that is, showing how specific information flows in our society have changed and why— allows you to understand: (a) what elements of the system a given policy proposal targets, (b) how that proposal would change the public discourse relative to other proposals, and (c) most importantly, how likely it is that the policy proposal will accomplish its stated goals. With it, lawmakers, regulators, and policy advocates alike can share a framework for processing different policy options. And by understanding how we got here, they can better design the sorts of policies that can take us to where we want to go.

So how *did* we get here? The majority of this paper seeks to provide an answer by walking readers through the Map, which is made of four parts. Part I, the *Rise of Platforms*, details how our society transitioned from a publisher-based public discourse to a platform-based public discourse. Part II, *Weakened Defenses: Degradation of the News Media Ecosystem*, explores how the shift to a platform-based public discourse undermined the traditional defenses of the publisher-based public discourse that used to filter out information pollution. Part III, *New Opportunities: The Emergent Role of Data*, explains why the public discourse has been consolidated onto a few massive platforms and why information pollution proliferates so broadly on

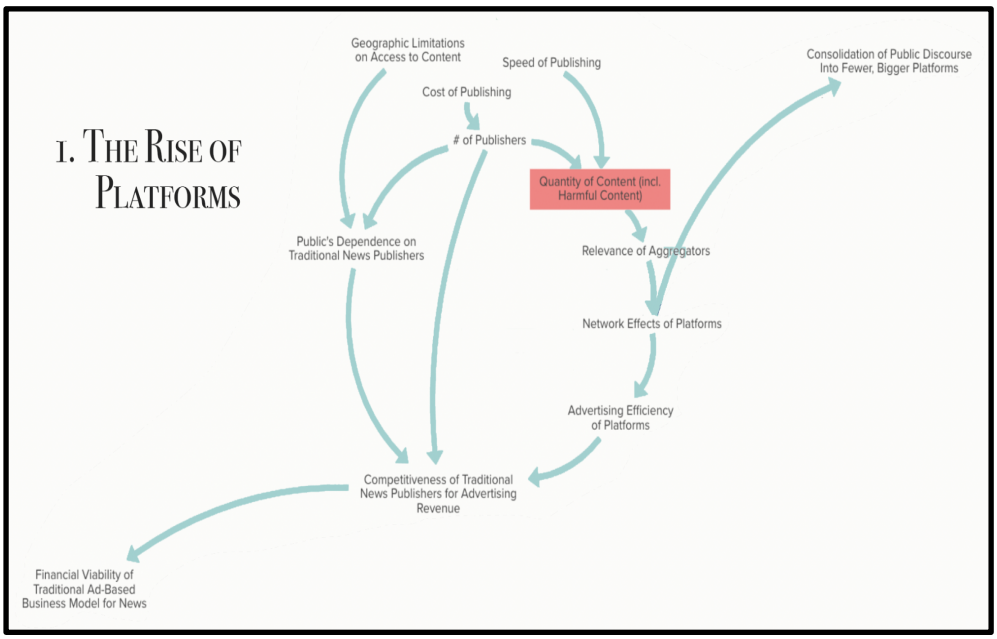
[1] The Map appears on Page 118.

them. And Part IV, the *Quagmire of Content Moderation*, addresses why platforms have seemingly been unable to clean up the crisis themselves.

Finally, after walking through the Map, readers will be prepared to use it as a framework. Part V, *Using the Map*, explains how to do so by mapping the most prominent policy proposals onto it. It reveals that these proposals, which currently compete for attention, are actually complementary to one another, targeting distinct challenges of the platform-based public discourse. Intermediary liability and the First Amendment focus on the *Quagmire of Content Moderation*, asking what speech should be allowed on platforms; privacy regimes target *New Vulnerabilities*, asking what algorithms should be allowed to do; antitrust and competition law focus on the *Rise of Platforms*, asking how much influence platforms should have; and media regulation focuses on *Weakened Defenses*, asking how we can improve the quality of the news media. Individually, any one of these legal tools is insufficient; collectively, however, they can create a multi-pronged, comprehensive regulatory regime capable of meeting the complexity of the challenge. Visualized through the Map, this article makes that complexity accessible, bringing order to a chaotic policy debate around platforms and the public discourse.


Information Pollution & The Public Discourse
1. The Rise of Platforms
2. Weakened Defenses
3. New Vulnerabilities
4. The Quagmire of Content Moderation
Geographic Limitations on Access to Content
Cost of Publishing
Speed of Publishing
# of Publishers
Quantity of Content (incl. Harmful Content)
Public's Dependence on Traditional News Publishers
Competitiveness of Traditional News Publishers for Advertising Revenue
Relevance of Algorithms
Network Effects of Platforms
Advertising Efficiency of Platforms
Consolidation of Public Discourse Into Fewer, Bigger Platforms
Platform's Emphasis on User Growth & Retention
Emphasis on Tracking & Increasing User Engagement
Platform Ability to Collect User Data
Platform Ability to Target Content/Users/Audiences (Recommendations & Ads)
Vulnerability to Information Pollution
Accessibility of Content (incl. Harmful Content)
Financial Viability of Traditional Ad-Based Business Model for News
Revenue from Advertising (News Ecosystem)
News Ecosystem's Reliance on Ad. Revenue Streams
Non-Advertising Revenue (News Ecosystem)
Proclivity to Prioritize Non-Publishing Business Interests Over Business Interests
Investment in Quality & Reliability of Newsgathering
Accountability Function of News Publishers
Editorial Independence & Commitment to Journalistic Standards in News Production
Trust in Traditional News Publishers
Accessibility of News Content by Public
Nationalization of the News Ecosystem
Vulnerability to Information Pollution
Public Scrutiny of Content Moderation by Platforms ("Too much harmful content")
Advertisers' Fears of "Brand Safety" on Platforms
Stringency of Content Moderation Practices
Public Scrutiny of Content Moderation by Platforms ("Too much censorship")

I. THE RISE OF PLATFORMS



A. Cheap Speech, Immediately, Anywhere

This first subsystem of the Map explains how our society transitioned from a publisher-based public discourse to a platform-based one. Starting with three forces that democratized access to the public discourse—lower **Cost of Publishing**, higher **Speed of Publishing**,[2] and the elimination of **Geographic Limitations on Access to Content**[3]—the *Rise of Platforms* explains what prompted the initial cascade of consequences that followed.[4]

The triggering event arrived at the turn of the millennium when the Internet pushed the **Cost of Publishing** to near-zero with self-publishing services like Geocities, Blogger, and WordPress. Our information ecosystem responded with a Big Bang-like explosion in the **Number of Publishers**. A look at the media landscape in 2004, the twilight of the still-prospering

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[2] *See* Ekaterina Zhuravskaya, Maria Petrova, & Ruben Enikolopov, *Political Effects of the Internet and Social Media*, 12 ANN. REV. ECON 415, 416-17 (2020) (detailing the social costs of platforms' low barriers to entry and unprecedented speed of sharing information).

[3] Joshua Benton, *Clay Shirky: Let a thousand flowers bloom to replace newspapers; don't build a paywall around a public good*, NIEMAN LAB (Sept. 23, 2009, 2:13 PM), https://www.niemanlab.org/2009/09/clay-shirky-let-a-thousand-flowers-bloom-to-replace-newspapers-dont-build-a-paywall-around-a-public-good/ ("The grave danger is that our political life is still organized around geography, but the web? Not so much.").

[4] *See infra* Part II & III.

publisher-based public discourse, and the dawn of the platform-based discourse puts the paradigm shift into perspective. That year, approximately 1,400 newspapers were published in the United States, employing 71,640 newsroom employees.[5] In contrast, more than eight million Americans launched their own blogs[6]—the rough equivalent of 156,000 new newsrooms entering the public discourse. Although the majority of these blogs published infrequently or fizzled out after a short period of time, the phenomenon was so pervasive, sudden, and bewildering that "blog" became Merriam-Webster Dictionary's most-looked-up word of the year.[7] Two years later, in honor of bloggers "seizing the reins of the global media, . . . founding and framing the new digital democracy, . . . working for nothing and beating the pros at their own game," Time Magazine named "You," the blogger, as its venerated Person of the Year.[8]

This increase in the **Number of Publishers** had two primary effects. First, in tandem with the unprecedented **Speed of Publishing**[9] on the Internet, the **Quantity of Content** competing for attention in the public discourse grew exponentially. Again, comparison illuminates the magnitude of the transformation. In 2006, "a typical metropolitan paper" published close to 100 stories per day. A TV news program might cover a dozen more, and a cable TV subscription might add about a hundred channels with programming competing at any given moment.[10] To be sure, there was a lot of content vying for the public's attention, but by digital standards, competition was jarringly constrained. In 2008, Google published a blog post celebrating the one trillionth unique web page indexed by the search engine.[11] And since those still-early days of the consumer web, the velocity and

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[5] Penny Abernathy, *The State of Local News-The 2022 Report*, NORTHWESTERN MEDILL LOCAL NEWS INITIATIVE (June 29, 2022), https://localnewsinitiative.northwestern.edu/research/state-of-local-news/report/; *Newspapers Fact Sheet*, PEW RSCH. CTR. (June 29, 2021), https://www.pewresearch.org/journalism/fact-sheet/newspapers/.

[6] Lee Rainie, *The State of Blogging*, PEW RSCH. CTR. (Jan. 2, 2005), https://www.pewresearch.org/Internet/2005/01/02/the-state-of-blogging/.

[7] *Word of the Year Retrospective*, MERRIAM-WEBSTER, https://www.merriam-webster.com/words-at-play/2014-word-of-the-year-retrospective (last visited Feb. 4, 2023).

[8] *Time Magazine's 'Person of the Year' is ... You*, NBC NEWS (Dec. 16, 2006, 8:34 PM), https://www.nbcnews.com/id/wbna16242528.

[9] *See* Katie Van Syckle, *See How The Times Gets Printed and Delivered*, N.Y. TIMES (Aug. 5, 2018), https://www.nytimes.com/2018/08/05/insider/times-printing-plants-delivery.html (noting that in 2018, it takes newspapers "six hours to get it from the print site to the reader's driveway").

[10] *See* Paul Starr, *Goodbye to the Age of Newspapers (Hello to a New Era of Corruption)*, NEW REPUBLIC (March 3, 2009), https://newrepublic.com/article/64252/goodbye-the-age-newspapers-hello-new-era-corruption.

[11] *We knew the web was big...*, GOOGLE OFF. BLOG (July 25, 2008), https://googleblog.blogspot.com/2008/07/we-knew-web-was-big.html.

quantity of content flooding our information ecosystem has only accelerated.[12]

This deluge not only triggered a change in the quantity of information fighting for attention in our public discourse, but also its character. For better or for worse—and certainly there were drawbacks—the facts contained in new articles and TV programs were generally scrutinized for adherence to a certain editorial standard by a journalist, editor, or producer before being published or broadcast. But as the Internet democratized participation in the public discourse, it empowered the scrupulous and unscrupulous alike. So while upstart digital publishers and bloggers like BuzzFeed, the Drudge Report, Ezra Klein, and Andrew Sullivan seized their opportunities, so, too, did neo-Nazis[13] and conspiracy theorists.[14] "When you make something frictionless," commented one blogger, "it becomes easier to do *everything*, both good and evil."[15]

The second consequence of exponentially increasing the **Quantity of Content** is a decrease in the **Public's Dependence on Traditional Publishers**.[16] Simply put, the proportion of the public's information consumption coming from traditional publishers dropped precipitously. In a publisher-based public discourse, people had no choice but to depend on traditional publishers if they wanted to learn about the world; now, because of increased competition from other publishers, this is no longer the case. By 2022, for example, no traditional news organizations ranked among the top 10 most trafficked websites, and only three — the *New York Times*, CNN, and Fox News — ranked in the top 50.[17]

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[12] Bernard Marr, *How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read*, FORBES (May 21, 2018), https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/?sh=7822f8f60ba9.

[13] *See* JESSIE DANIELS, CYBER RACISM: WHITE SUPREMACY ONLINE AND THE NEW ATTACK ON CIVIL RIGHTS (2009) (examining how white supremacist organizations translated their printed publications onto the Internet).

[14] Stephan Lewandowsky et al, *Recurrent Fury: Conspiratorial Discourse in the Blogosphere Triggered by Research on the Role of Conspiracist Ideation in Climate Denial*, 3 J. SOC. POL. PSY. 142 (2015) ("Internet blogs in particular have become the staging ground for conspiracy theories that challenge the link between HIV and AIDS, the benefits of vaccinations, or the reality of climate change.").

[15] Ben Thompson, *The Super-Aggregators and the Russians*, STRATECHERY (Sept. 18, 2017), https://stratechery.com/2017/the-super-aggregators-and-the-russians/.

[16] *See* A. Guttmann, *Time spent per day with digital versus traditional media in the United States from 2011 to 2023,* STATISTA (Jan 9, 2023), https://www.statista.com/statistics/565628/time-spent-digital-traditional-media-usa/ (In 2011, Americans spent 453 minutes per day with traditional media, compared to 214 minutes on digital media; by 2022, that ratio inverted.).

[17] *Top 100: The Most Visited Websites in the US*, SEMRUSH BLOG (Dec. 2022), https://www.statista.com/statistics/565628/time-spent-digital-traditional-media-usa/.

A third feature of the Internet had a different effect. Previously, except for some broadcasts and cable news, there were powerful **Geographic Limitations on Access to Content**.[18] Because "you could only sell a newspaper as far as a truck could profitably drive"[19] and because newspaper markets tended toward local monopolies,[20] newspaper companies faced limited competition from competing news providers. These physical limitations imposed a decentralizing force in our publisher-based public discourse, facilitating a vibrant local newspaper ecosystem.[21] For people in Detroit, for example, the *Detroit Free Press* provided access to local, national, and global news. Because the Internet placed information online, it erased those geographic limitations on access.[22] Although few other websites could provide the same comprehensive coverage of news in Detroit and Michigan as the *Free Press*, many could offer better national and global coverage. In tandem with the rising **Number of Publishers** online, the removal of geographic limitations on access to content further diminished the **Public's Dependence on Traditional News Publishers**.

B. Consolidation of the Public Discourse onto Fewer, Bigger Platforms

Among the most straightforward benefits of the publisher-based ecosystem was that if you wanted to know what was going on, you knew where to look. The explosion in the **Quantity of Content** on the Internet complicated that task tremendously, however, and vastly increased the **Relevance of Aggregators**. Specifically, it created a new competitive advantage in the market for attention for those who could aggregate the chaotic multitude of content in a single destination and help people find what they were looking for.[23] Social networks in particular benefited tremendously from this new opportunity due to their unique function as aggregators supercharged by the **Network Effects of Platforms**. As Ben Thompson, an author focused on the unique dynamics of Internet companies, explains, the

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[18] Lisa M. George, *The Economics of Newspapers in a Digital Age*, FED. TRADE COMM'N (Dec. 2, 2009), https://www.ftc.gov/sites/default/files/documents/public_events/how-will-journalism-survive-Internet-age/george.pdf.

[19] Joshua Benton, *Clay Shirky: Let a thousand flowers bloom to replace newspapers; don't build a paywall around a public good*, NIEMAN LAB (Sept. 23, 2009, 2:13 PM), https://www.niemanlab.org/2009/09/clay-shirky-let-a-thousand-flowers-bloom-to-replace-newspapers-dont-build-a-paywall-around-a-public-good/.

[20] Starr, *supra* note 10.

[21] *Id.*

[22] George, *supra* note 18.

[23] *See* Ben Thompson, *Defining Aggregators*, STRATECHERY (Sept. 26, 2017), https://stratechery.com/2017/defining-aggregators/ (explaining how aggregators who deal with digital goods can benefit by discovering and curating those goods for their users).

users of social networks play a double role as publishers and audience. At first, people join Facebook because their friends are on Facebook and they want to see what their friends are posting. "[O]ver time," Thompson writes, "as more and more attention is given to the social networks, professional content creators add their content to the social network for free."[24] In other words, Facebook attracts college students, and then the likes of BuzzFeed and Breitbart arrive. "Those additional suppliers then make the aggregator more attractive to more users, which in turn draws more suppliers, in a virtuous cycle."[25] Soon, the platform functions as an aggregator not just of content shared among friends, but of all content published by all publishers.

As this growth in content continually increases the relevance of aggregation, and the need for aggregators is best met by social media platforms that benefit from network effects, the ultimate effect is the **Consolidation of the Public Discourse into Fewer, Bigger Platforms.** "[T]hanks to these virtuous cycles, the big get bigger;" Thompson concludes, "indeed, all things being equal the equilibrium state in [such] a market . . . is monopoly: one aggregator that has captured all of the consumers and all of the suppliers."[26] As publishers become mere suppliers to the social media platforms that won the competition for the public's attention, the transition to a platform-based public discourse is complete.

C. Financial Unviability of the Traditional News Business Model

In parallel, the **Network Effects of Platforms** have a second consequence: they increase the **Advertising Efficiency of Platforms.** As audiences consolidate onto their products, platforms now can more easily deliver ads to more users.[27] This is an obvious boon for platforms' businesses, but it has a more painful side effect for traditional publishers, who have smaller audiences and whose **Competitiveness for Advertising Revenue** declines relative to platforms. This diminished competitiveness occurs simply by virtue of the newly introduced online competition with other publishers and platforms. As more people turn to platforms rather than publishers to learn about the world, the less their **Dependence on Traditional News Publishers** and the less attention they give them, which further undermines publishers' competitiveness for advertising revenue.

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[24] *Id.*

[25] *Id.*

[26] Ben Thompson, *Antitrust and Aggregation*, STRATECHERY (Apr. 26, 2016), https://stratechery.com/2016/antitrust-and-aggregation/.

[27] Access to mass audiences is the first structural advertising advantage that prioritizes platforms over publishers. While scale alone is insufficient to dominate the advertising industry, it is a necessary precondition to establishing the dominance that platforms later established. *See infra* Part III.

The trouble for traditional news publishers is that they have always depended for revenue primarily on commercial and classified advertising. In a publisher-based discourse, news publishers were not just the only game in town for readers, listeners and viewers, but for the advertisers seeking to reach those audiences, too. That meant advertisers had little choice but to spend their advertising budgets with news publishers. "If there is one overriding factor behind the current financial crisis of the press, it is simply that the Internet has undermined the newspaper's role as market intermediary," writes Paul Starr in *The New Republic*.[28] "Advertisers do not need to piggyback on the news to reach consumers, and consumers have other ways to find out about products and sales."[29] Compounding problems, to the extent publishers could sell advertising online, the rates commanded by digital ads on websites paled in comparison to those in print.[30]

Thus, given the existential centrality of advertising to traditional publishers, as the **Competitiveness of Traditional Publishers for Advertising Revenue** declined, the **Financial Viability of the Traditional Advertising-Based Business Model for News** did too. For Starr,

> By superseding the role of the newspaper as a local market intermediary, the Internet has undercut the economic foundations of the press. No doubt this is a gain in efficiency, because advertisers no longer have to pay monopoly prices to newspapers and can now use cheaper alternatives like free ads on Craigslist. But there is also a cost to democratic values, as newspapers lose their ability to cross-subsidize publicservice [sic] journalism.[31]

In conclusion, the Internet triggered a shift from publisher-based public discourse to a platform-based public discourse, which had two primary effects. First, it led to a **Consolidation of the Public Discourse into Fewer, Bigger Platforms,** and second, it undermined the **Financial Viability for the Traditional Advertising-Based Business Model for News.** As we will see in the subsequent two sections, this has two major implications for information pollution.

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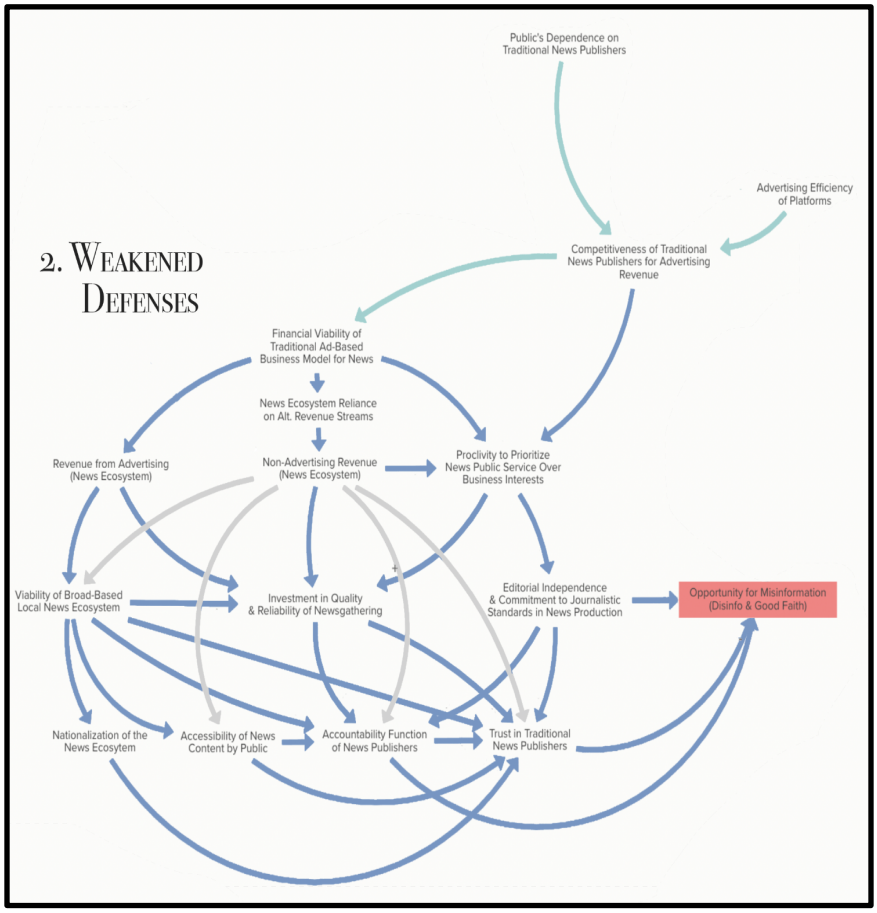
[28] Starr, *supra* note 10.

[29] *Id.*

[30] David Cohn, *When Journalism's Digital Dimes Are Made of Silver*, MEDIASHIFT (July 18, 2013), http://mediashift.org/2013/07/when-journalisms-digital-dimes-are-made-of-silver/.

[31] Starr, *supra* note 10.

II. WEAKENED DEFENSES: DEGRADATION OF THE NEWS MEDIA ECOSYSTEM



A. The Four Defenses of the Publisher-Based Public Discourse

The publisher-based public discourse was by no means perfect. It was an undemocratic, unaccountable gatekeeper of what information ought to matter to society. Solely due to their success in local markets for attention, news organizations unilaterally decided what issues to report on, which facts to emphasize, how to frame them, and what to publish. With little exception, these decisions were made by people who failed to reflect the economic, gender, and racial makeup of the communities they served.[32] Additionally,

[32] For example, in 1971, women journalists made up just 22 percent of newsrooms. Christy C. Bulkeley, *A Pioneering Generation Marked the Path For Women Journalists*, NIEMANREPORTS (Spring 2002), https://niemanreports.org/articles/a-pioneering-generation-marked-the-path-for-women-journalists/. Today the number is closer to 40 percent. Craig T. Robinson, Meera Selva & Rasmus Klein Nielsen, *Women and leadership in the news media*

the corporate consolidation of news organizations in the latter decades of the 20th century allowed business interests to improperly infringe on the editorial independence of newsrooms.[33] There is no doubt that explicit prejudice, implicit bias, and improper influence pervaded news coverage throughout much of the publisher-based public discourse. On that front, the shift to a more democratized platform-based public discourse is an unquestioned improvement.

Without diminishing those faults, however, the publisher-based public discourse was unequivocally better than its contemporary counterpart in at least one way: publisher-based public discourse was not nearly as vulnerable to information pollution as platform-based discourse is. And while a significant reason for this was because the public could not freely participate in the public discourse before the Internet democratized publishing,[34] it is not the whole story. Moreover, because news organizations—rather than, say, the government—had a monopoly over the public discourse, a set of journalistic practices and norms developed around the goal of fostering an informed public in our democracy. Collectively, those practices served to establish four key defenses that bolstered the integrity of the public discourse:

1. The production of reliable, editorially independent journalism;
2. Widespread accessibility to that journalism;
3. The accountability function played by news organizations; and
4. Trust in journalism by the public.

In explaining those defenses, this section primarily focuses on newspapers because they have historically provided the vast majority of original reporting that other media rely upon.[35] Consequently, newspapers have been deemed a "keystone species" in local news ecosystems and play a uniquely important role in the supply of quality information to a public

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2021: evidence from 12 markets, REUTERS INST. FOR THE STUDY OF JOURNALISM AT UNIV. OX. (March 8, 2021), https://reutersinstitute.politics.ox.ac.uk/women-and-leadership-news-media-2021-evidence-12-markets. Ethnic and racial diversity fared even worse. *See* Gabriel Arana, *Decades of Failure*, COLUM. JOURNALISM REV. (Fall 2018), https://www.cjr.org/special_report/race-ethnicity-newsrooms-data.php (noting that in 2018, "racial and ethnic minorities comprise almost 40 percent of the US population, yet they make up less than 17 percent of newsroom staff at print and online publications").

[33] *See* DAVIS MERRITT, KNIGHTFALL: KNIGHT RIDDER AND HOW THE EROSION OF NEWSPAPER JOURNALISM IS PUTTING DEMOCRACY AT RISK 53—54 (2005) (discussing the dilemma that a news organization faced in finding money for expansion by going public but losing editorial independence).

[34] *See supra* Part I.

[35] Starr, *supra* note 10 ("Studies . . . have repeatedly shown that broadcast news follows the agenda set by newspapers, often repeating the same items, albeit with less depth.").

discourse.[36]

1. Production of Reliable, Editorially Independent Journalism

The first defense that our public discourse used to have against information pollution was the production of reliable, editorially independent journalism by newspapers insulated from meaningful competition. This section explains how that worked in practice.

To begin, the critical thing to understand about the publisher-based public discourse is that the stranglehold news publishers had on the market for advertising insulated news production from market pressures. Because of the slim competition for advertising revenue, business pressures—to write advertising-friendly stories or not to write controversial ones, for example—exerted a relatively low level of influence on the journalism produced by news organizations. "With only a few ways to deliver news—newspapers, magazines, radio, and TV—journalists . . . didn't think about outside pressure," writes Tom Rosenstiel and Bill Kovach in *Elements of Journalism*, because they had "little or no challenge to their role as mediators over information or to the profitability of their companies . . . ."[37] The Map shows how that worked in practice: the absence of meaningful **Competition for Advertising Revenue** ultimately led to a **Proclivity Among News Publishers to Prioritize the Public Service of News Production Over Business Interests**.[38] "When they were financially strong," Starr observed, "newspapers were better able not only to invest in long-term investigative projects but also to stand up against pressure from politicians and industries to suppress unfavorable stories."[39]

This proclivity for public service is what gave rise to what journalists used to call the "separation of church and state."[40] As Victor Pickard, a professor of American media studies at the University of Pennsylvania, writes, "Papers . . . began imposing a strict boundary between the news and business sides of their operations. This firewall between 'church and state'

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[36] PEN AMERICA, LOSING THE NEWS: THE DECIMATION OF LOCAL JOURNALISM AND THE SEARCH FOR SOLUTIONS 7 (2019).

[37] BILL KOVACH & TOM ROSENSTIEL, THE ELEMENTS OF JOURNALISM 26 (4th ed. 2021).

[38] In the 19th and early 20th centuries, partisan newspapers were common, but by the mid 20th century, "objective" newspapers outcompeted them. KNIGHT COMMISSION ON TRUST, MEDIA & DEMOCRACY, CRISIS IN DEMOCRACY: RENEWING TRUST IN AMERICA 29–32 (2019). Business incentives therefore initiated the public service-oriented approach to newspapers, but as the winners established local monopolies, the proclivity to prioritize public service over business interests took root.

[39] Starr, *supra* note 10.

[40] *See* MERRITT, *supra* note 33, at 122 (describing how this separation functioned in practice).

would presumably shield journalism from commercial pressures."[41] While "always a porous barrier," the key variable that determined the degree of porousness was ownership.[42] But as a general rule, the greater this **Proclivity**, the greater the newsroom's **Editorial Independence** from newspaper owners and the business side of the operation, and the stronger its **Commitments to Journalistic Standards** like nonpartisanship and objectivity. In a legendary example, when the owner of the Chicago Tribune commissioned the Tribune Tower in the 1920s, he insisted it be designed with separate banks of elevators for newsroom and business staff.[43] "He didn't want his advertising salesmen even to ride with his reporters," writes Rosenstiel.[44] Davis Merritt, former editor of the *Wichita Eagle*, described the relationship more directly: "Fierce independence from commercial concerns and local autonomy for editors were primary operating principles. The corporate staff was minimal and of little moment as far as the journalists were concerned . . . ."[45] Thus, although the strength of that proclivity varied by degree depending on the paper and its owner, editorial independence of the newsroom from business and political pressure became a defining norm of news publishers in the 20th century, and "journalists came to see this protocol as one of their most sacred tenets."[46]

The prevalence of **Editorial Independence** played another valuable function. Because news organizations had a functional monopoly over distribution of information in a publisher-based public discourse, the **Public's Dependence on Traditional News Publishers** was central not only for consuming the news, but also for participating in the public discourse. As a result of this monopoly, any ideas, narratives, or viewpoints competing in the public discourse relied for their success on getting into the news—and, therefore, would be subject to vetting by the newspapers' **Editorial Independence and Journalistic Standards.** By no means was this a perfect guard against information pollution. An award-winning investigation by *Rolling Stone*, for example, chronicled how a government contractor

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[41] VICTOR PICKARD, DEMOCRACY WITHOUT JOURNALISM? 30 (2020).

[42] *Id.*; *see also* KOVACH & ROSENSTIEL, *supra* note 37, at 94 ("History suggests that this [firewall between an organization's news and business operations] works only when the owner of the operation believes deeply in . . . journalistic values."); Penelope M. Abernathy, *The Rise of a New Media Baron and the Emerging Threat of News Deserts*, THE CTR. FOR INNOVATION AND SUSTAINABILITY IN LOCAL MEDIA 20 (2016), https://www.usnewsdeserts.com/reports/rise-new-media-baron/ ("With each generation of newspaper owner, there has been debate about how to prioritize obligations to the public versus those to major shareholders.").

[43] KOVACH & ROSENSTIEL, *supra* note 37, at 85.

[44] *Id.* at 86.

[45] MERRITT, *supra* note 33, at 14.

[46] PICKARD, *supra* note 41, at 30.

laundered misinformation about the Iraqi development of weapons of mass destruction through the *New York Times* to build public support for the Second Iraq War.[47] *CBS News* anchor Dan Rather's otherwise esteemed career ended when he reported on a false document about President George W. Bush's service in the National Guard.[48] And high profile examples of fabricated articles in the *Washington Post*, *New York Times* and *New Yorker* have become staples of the journalism school curriculum precisely because they eluded newsroom review.[49] Nonetheless, the infamy of these exceptions prove the rule; and these imperfect defenses played an important role throughout the 20th century in limiting the amount of information pollution that could enter and find a foothold in the public discourse.

Additionally, a greater **Proclivity to Prioritize the Public Service of News Production Over Business Interests** implies a greater perception within the news organization's ownership and management of the value of the newsroom (relative to the advertising department) to the company and to the community it serves. Consequently, this increases the **Investment in the Quality and Reliability of Newsgathering** in the form of more and better reporters, editors, fact-checkers, researchers, and the like.[50] That is because newspaper owners "most often select, hire, fire, and promote the editors, and publishers, top general managers, news directors, and managing editors—the journalists—who run their newsrooms," Rosenstiel writes.[51] "Owners determine newsroom budgets, and the amount of time and space allotted to news versus advertising. They set the standards of quality by the quality of people they choose and the news policies they embrace."[52] And while that unbridled commitment to the public interest by newspaper owners was not universal, it was the dominant philosophy for newspaper owners through most of the 20th century before the shift to a platform-based public discourse. As Abernathy writes, "Perhaps the biggest difference between [modern newspaper owners] and their predecessors is their pivot away from a long-

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[47] James Bamford, *The Man Who Sold the War*, ROLLING STONE (Dec. 1, 2005).

[48] Stephen Kiehl & David Zurawik, *CBS fires 4 executives, producers over Bush-National Guard report*, BALTIMORE SUN (Jan. 11, 2005), https://www.baltimoresun.com/entertainment/tv/bal-te.to.cbs11jan11-story.html.

[49] *See, e.g.*, Mike Sager, *The Fabulist Who Changed Journalism***,** COLUM. JOURNALISM REV. (2016).

[50] MERRITT, *supra* note 33 at 2–3 (describing the role of reporters and editors); Belinda Alzner, *Copy Editors Laid Off More Than Other Newsroom Staffers—But Can Newspapers' Credibility Afford the Cut?*, J SOURCE (Feb. 7, 2013), https://j-source.ca/copy-editors-laid-off-more-than-other-newsroom-staffers-but-can-newspapers-credibility-afford-the-cut/ (describing the role of copyeditors); Merrill Fabry, *Here's How the First Fact-Checkers Were Able to Do Their Jobs Before the Internet*, TIME (Aug. 24, 2017), https://time.com/4858683/fact-checking-history/ (describing the role of factcheckers).

[51] KOVACH & ROSENSTIEL, *supra* note 37, at 94.

[52] *Id.* at 95.

term commitment to local journalism and the communities their newspapers have historically served toward a short-term investment and management strategy."[53]

Thus, the **Proclivity to Prioritize News's Public Service Over its Business Interests** is the essence of the first defense against information pollution in our public discourse: the production of reliable, editorially independent journalism. That proclivity is the seed from which the investment in reliable, editorially independent journalism grows. And that proclivity is derived from the **Competitiveness Among Traditional Publishers for Advertising Revenue**; essentially, its former status as a monopoly.

2. Widespread Accessibility to Trustworthy Journalism

Widespread accessibility to trustworthy journalism helps ensure that the journalism being produced has its desired effect of informing the public so that our democracy can more effectively self-govern. A recent PEN America report captures this:

> When the local news ecosystem works well, it plays a vital and irreplaceable role in safeguarding the health and welfare of communities across the country: keeping them apprised of critical information, amplifying local issues to attract regional or national attention, holding local government and corporations accountable, and building social cohesion by telling stories that build solidarity and mutual understanding.[54]

In this way, widespread accessibility to journalism can be understood as a defense against information pollution, because its absence leads to a less informed public, with a less shared understanding of reality, and, as a result, a community more susceptible to false, misleading, extreme or otherwise low-quality information. Of course, the production and accessibility of journalism alone are not sufficient to guarantee an informed public—the public must also have trust in the media[55]—but they are necessary prerequisites to having an informed public.

Having covered the dynamics that led to the **Production of Reliable, Editorially Independent Journalism** in Part I.a, this section will explore the features that fostered elevated levels of accessibility of trustworthy

[53] Abernathy, *supra* note 42, at 20.
[54] PEN AMERICA, *supra* note 36, at 8.
[55] *See infra* Part II.a.iii (discussing the public's trust of journalists).

journalism in the publisher-based public discourse. To that end, **Accessibility to Trustworthy Journalism** depends on two questions being answered in the affirmative. First, is trustworthy journalism actually being produced in a given market? That is, is the proclivity described in Part I.b sufficiently prevalent among newspaper owners in communities across the nation? Second, is that journalism generally accessible to the public? This is a function of the business model relied on by the newspaper: Is it charging for access? And if so, can the community it serves afford access?[56] On the Map, these questions address the **Viability of a Broad-Based Local News Ecosystem** and the **News Ecosystem's Reliance on Non-Advertising Revenue.**

a) Viability of a Broad-Based News Ecosystem

The dominant **Competitiveness Among Traditional Publishers for Advertising Revenue** in the publisher-based public discourse provided the basis for the first defense, production of reliable, editorially independent journalism, as well as the second, widespread accessibility to that journalism. Specifically, because that market dominance assured the **Financial Viability of the Traditional Ad-Based Business Model for News**, and because that model could be successfully replicated in communities across the nation, that competitiveness enabled the **Viability of a Broad-Based Local News Ecosystem.**

As described in Part I, news organizations monopolized the mass distribution of information. And because the public wanted information and advertisers wanted the public's attention, newspapers were uniquely positioned to supply both of their demands through the publication of news and advertisements.[57] What emerged from this dynamic was a comprehensive local news ecosystem: a nationwide patchwork of local and regional news monopolies, each with (to varying degrees) the proclivity to prioritize public service of news over business interests. As a consequence, throughout the 20th century, in almost every community in America, a local or regional paper published relevant, reliable, editorially independent news about its local government and community.[58] The upshot was that if you sought to be an informed citizen in your community, a local newspaper provided the trustworthy information for you to do so.[59]

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[56] The digital divide is another factor in accessibility that is beyond the scope of this paper.

[57] *See* Starr, *supra* note 10 (discussing newspapers' "role as market intermediaries").

[58] Abernathy, *supra* note 42, at 20.

[59] Subject to the caveats about the representation of the publisher-based public discourse at the beginning of Part II.a and note 32.

b) Financial Viability of the Traditional Ad-Based Business Model for News

Accessibility to trustworthy journalism is not just a matter of whether or not it is produced in your community, however. It also depends on whether those who want access to it can get it. In practice, this is a question of whether the news product is affordable—a question that can generally be answered by the business model of the news organization.

In the publisher-based public discourse, the **Financial Viability of the Traditional Ad-Based Business Model for News** used to assure that the news was accessible because the cost to the consumer was heavily subsidized by advertising revenues. "For the past three hundred years," Starr writes, "newspapers have been able to develop and flourish partly because their readers have almost never paid the full cost of production."[60] The historical price of newspapers essentially tells the whole story. "[N]early 90 percent of the nation's newspapers now sell on newsstands or in racks for 25 cents or 35 cents apiece," reported Alex Jones in the *New York Times* in 1991, a year when the average price of a dozen eggs stood at 99 cents.[61] These prices reflected a recent price hike that marked the third decade in a row that news organizations had increased costs to consumers. "In each case, the newspaper industry was in an advertising slump."[62] The pattern was simple: When advertising declined, newspapers relied on consumers to make up the gap. Thus, under the traditional ad-based business model for news, there was an inverse correlation between the **Financial Viability of the Ad-Based Business Model for News** and the widespread accessibility to that news.

3. Trust in Journalism by the Public

Trust in journalism functions as a third defense against pollution of the public discourse, because it inoculates the public against insurgent narratives that distort the public discourse. The faith that the public had in the *Washington Post* and *New York Times*, for example, meant that news reporting about the Watergate scandal proved more persuasive than denials from President Nixon.[63] To the extent that the monopolistic role of news

[60] Starr, *supra* note 10.

[61] Alex Jones, *The Media Business; Newspapers Raising Prices as Advertising Falls*, N.Y. TIMES (Jan. 14, 1991), https://www.nytimes.com/1991/01/14/business/the-media-business-newspapers-raising-prices-as-advertising-falls.html; Ben Wittstein, *The cost of goods the year you were born*, STACKER (Nov. 17, 2020), https://stacker.com/stories/1227/cost-goods-year-you-were-born.

[62] Jones, *supra* note 61.

[63] *See* Andrew Glass, *Nixon Denies Role in Watergate Cover-up, Aug. 15, 1973*,

organizations in the publisher-based public discourse restricted the diversity of voices or ideas, however, or even pushed false narratives, a too-trusting public could have significant and harmful consequences.[64] Nonetheless, a shared reality fostered by the public's **Trust in Journalism**—that is, a collective belief in the credibility of news reporting—makes it less likely that information pollution will succeed in distorting the public discourse.

While trust in journalism depends on many factors, a few features are well understood. First, when news organizations publicly fail to prioritize the public interest over business or political interests, trust in the news suffers. A 2020 report from the Knight Foundation found that "Americans still value the media's traditional roles in society, such as providing accurate news and holding powerful interests accountable for their actions. . . . However, Americans see increasing levels of bias in the news media; majorities see bias in the news source they rely on most."[65] And those perceived biases arise from "newspaper ownership, commercial influence, and perceptions of hidden agendas."[66] Second, when news organizations get big stories wrong, intentionally or not, trust in the news suffers. "Anything that damages credibility — a rogue reporter's lies, a too-trusting attitude toward government sources and the prevailing narrative — has to be guarded against energetically," wrote Margaret Sullivan in the aftermath of two prominent scandals.[67] "Because once it happens, that damage can take years — yes, a decade or more — to repair."[68] And finally, people trust their local news more than they do national news. As Tom Rosenstiel has said, for many people, "there's '*the* media' (bad) and there's '*my* media' (fairly good)."[69] Thus, the greater the **Viability of a Broad-Based Local News Ecosystem**, the greater **Trust in the News** by the public.

Trust in the media is a vibrant area of scholarship, providing numerous theories for the decline in trust in the media. One such theory

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POLITICO (Aug. 15, 2008, 12:01 AM), https://www.politico.com/story/2018/08/15/nixon-denies-role-in-watergate-cover-up-aug-15-1973-773476.

[64] *See* notes and accompanying text, *supra* notes 47–49.

[65] *American Views 2020: Trust, Media and Democracy*, KNIGHT FOUND. (Aug. 4, 2013), https://knightfoundation.org/reports/american-views-2020-trust-media-and-democracy/.

[66] Nic Newman & Richard Fletcher, *Bias, Bullshit and Lies – Audience Perspectives on Low Trust in the Media*, DIGITAL NEWS PROJECT (2017), https://www.digitalnewsreport.org/publications/2017/bias-bullshit-and-lies-audience-perspectives-on-low-trust-in-the-media/.

[67] Margaret Sullivan, *Repairing the Credibility Cracks*, N.Y. TIMES (May 4, 2013), https://www.nytimes.com/2013/05/05/public-editor/repairing-the-credibility-cracks-after-jayson-blair.html.

[68] *Id.*

[69] Michael Schudson, *The Fall, Rise, and Fall of Media Trust,* COLUM. JOURNALISM REV. (Winter 2019), https://www.cjr.org/special_report/the-fall-rise-and-fall-of-media-trust.php.

suggests that news analysis and opinion increasingly displaced fact-based reporting of the news.[70] Another suggests that as newspaper ownership trends shifted from local family ownership to chain ownership to ownership by private equity firms, the proclivity to prioritize the public interest declined.[71] And as the shift from local to national news has accelerated in recent years, the public now associates certain news sources with partisan agendas.[72] What is clear is that trust in the media began falling in the 1970s, when many of these trends began—at the height of the publisher-based public discourse—and long before the shift to a platform-based public discourse.[73]

Nonetheless, in a publisher-based public discourse, the news media's monopoly over the public discourse meant that to whatever degree the public actually trusted the news, the public had no choice but to rely on it—and therefore trust it, however begrudgingly. A trust rooted in coercion may not seem like much of a defense against the harms of information pollution—and certainly is not an ideal one—but in a publisher-based public discourse, it served to enforce a shared reality that protected the public against those seeking to distort public discourse. That would change, of course, with the transition to a platform-based public discourse.[74]

4. The Accountability Function

The final traditional defense against information pollution is the **Accountability Function of Journalism**, the dynamic in which journalism helps the public hold its elected officials to a higher standard. The accountability function takes two forms: the observer effect and the democratic effect. This section will explore each of these two forms in turn. Additionally, as will be explained below, the accountability function is ultimately the cumulative product of the three preceding defenses.

With the observer effect, when journalists report on politicians and business, a dynamic emerges in which government officials and other power players know that their conduct is subject to scrutiny by the public, and they constrain their conduct accordingly. "Local reporters play the vitally important role of 'bearing witness' and it is socially beneficial to have them posted in all neighborhoods," writes Victor Pickard.[75] "Just having reporters on the scene can change the way that authorities operate, making them more accountable, especially in situations involving marginalized populations who

[70] *Id.*
[71] *See generally* Abernathy, *supra* note 42.
[72] PEN AMERICA, *supra* note 36, at 15.
[73] Schudson, *supra* note 69.
[74] *Infra* Part II.b.
[75] PICKARD, *supra* note 41, at 88.

often lack institutional support and political representation."[76] Thus, **Investment in the Quality and Reliability of Newsgathering** drives the **Accountability Function** up through the observer effect. More reporters means that more people are able to attend school board meetings and local hearings, investigate local business practices, and, generally, to represent the eyes and ears of the community.

The second driver of the accountability function is its democratic effect. To the extent that local news organizations have a proclivity to prioritize the public interest over business interests, the production of relevant, trustworthy journalism for a given community fosters an informed public to participate in representative government. "It is through local journalism that communities stay connected to and informed about what is happening in their backyards—especially in their schools, their governments, and other critical institutions and infrastructures," Pickard continues.[77] "They rely on local news to find out about the quality of their environment—whether their air and water are safe—and who is running for local office and why."[78]

For journalism to have these two effects, however, the public must trust the news organizations producing it. That trust relies on the **Proclivity** facilitating **Editorial Independence and Journalistic Standards**, sufficient **Investment in the Quality and Reliability of the Newsroom** to produce reliable journalism, and is further enhanced to the extent it is part of a **Broad-Based Local News Ecosystem**. Only if news is trusted by the public will the public act on it in ways that allow the news to perform its **Accountability Function** as the Fourth Estate.[79] Additionally, only if the subjects of news reporting believe that journalists have the power to shift public opinion—that their audience has sufficient **Trust in Journalism** to believe what is being reported—will they alter or constrain their conduct in ways that allow the news to perform its **Accountability Function**. Put another way, the democratic effect must function in order for the observer effect to function.

B. Weakened Defenses: Degradation of the News Media Ecosystem

The more strongly the system described in Part II.a functioned—a system that derived its power from news organizations' monopoly on advertising revenue—the more effectively information pollution was filtered from the public discourse. But because that system functioned most strongly

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[76] *Id.*

[77] PICKARD, *supra* note 41, at 102.

[78] *Id.*

[79] *See generally supra* Part II.a (describing "a set of journalistic practices and norms [that] developed around the goal of fostering an informed public in our democracy").

in the publisher-based public discourse, which propped up the **Competitiveness of Traditional Publishers for Advertising Revenue**, the shift to a platform-based public discourse unraveled the entire system. "Journalism in general, and local news in particular, are increasingly threatened by the Facebook-Google duopoly," writes Pickard, "which in recent years took a combined 85 percent of all new US digital advertising revenue growth, leaving only scraps for news publishers."[80] Looking at the Map, you can see how each of the four defenses are critically undermined when the **Competitiveness of Traditional Publishers for Advertising Revenue** and, consequently, the **Financial Viability of the Advertising-Based Business Model** collapses.

1. Less and Lower Quality News Leads to Lower Trust & Accountability

The first consequence of the diminished **Financial Viability of the Advertising-Based Business Model** is that newspaper owners can no longer afford the luxury of taking advertising for granted. Thus, their **Proclivity for Prioritizing the Public Interest Over Business Incentives** decreases, which leads to declines in **Investment in the Quality and Reliability of Newsgathering** and **Editorial Independence & the Commitment to Journalistic Standards**.

The decline in the **Investment in Quality & Reliability of Newsgathering** is perhaps the most dramatic and straightforward to observe. As Pickard writes:

> In a six-month period, the one hundred-and-seventy-eight-year-old *Detroit Free Press* cut home delivery to three times a week; the one-hundred-and-forty-six-year-old *Seattle Post-Intelligencer* went online only, cutting all but a handful of employees; the one-hundred-year-old *Christian Science Monitor* went online only; and the one-hundred-and-fifty-year-old *Rocky Mountain News* shut down. With many other papers in various stages of bankruptcy, some media commentators warned—correctly, as it turned out—that a major city would soon not have a daily newspaper. Within the next two years, Detroit, Cleveland, and New Orleans would all lack daily papers.[81]

These were not isolated examples, but took place nationwide.[82] And

[80] PICKARD, *supra* note 41, at 126.
[81] *Id.* at 44–45.
[82] Abernathy, *supra* note 42, at 12–13.

these dramatic losses of investment in the local news ecosystem translate directly into less and lower quality news that underpins the public discourse for communities across America. "The concern about statehouse coverage—indeed, about newspaper retrenchment in general—is not just the declining number of reporters, but deterioration in the quality of journalism," comments Starr.[83] "As the editorial ranks are thinned, internal checks on accuracy are being sacrificed. As reporters with years of experience are laid off, newspapers are losing the local knowledge and relationships with trusted sources that those reporters had built up, which enabled them to break important stories."[84] Starr wrote that in 2009, when the consequences of the shift to a platform-public discourse were only starting to emerge. A decade later, "[f]ears that had once seemed hyperbolic are now a distinct reality," Pickard wrote. "In 2009, before the *Rocky Mountain News* closed, Denver had around six hundred print journalists. After [a] recent round of layoffs, the city had fewer than seventy reporters."[85] As Starr commented on the same trend occurring in New Jersey, "That is a lot fewer pairs of eyes to keep watch over state agencies."[86]

Secondly, although more challenging to measure tangibly, **Editorial Independence and Journalistic Standards** also suffer as financial pressures mount. As discussed above, the degree of editorial independence and adherence to journalistic standards are products of ownership and management. As the **Financial Viability of the Traditional Ad-Based Business Model** collapses, management is forced to make tough choices. Some may make the "separation of church and state" more porous to develop more attractive advertising products, such as native advertising.[87] Other owners may choose to simply sell the paper to a better capitalized buyer who may be able to finance the paper, but who lacks a connection to the community the paper serves.[88] Whatever choices owners make, simply

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[83] Starr, *supra* note 10.

[84] *Id.*

[85] PICKARD, *supra* note 41, at 74.

[86] Starr, *supra* note 10.

[87] The emergence of native advertising and branded content as a business model notoriously blurred the lines between advertising and journalism in arguably unethical ways. *See* PICKARD, *supra* note 41, at 80.

[88] *See, e.g.*, Paul Farhi, *Washington Post to be sold to Jeff Bezos, the founder of Amazon*, WASH. POST. (Aug. 5, 2013), https://www.washingtonpost.com/national/washington-post-to-be-sold-to-jeff-bezos/2013/08/05/ca537c9e-fe0c-11e2-9711-3708310f6f4d_story.html; Tom Knox, *Columbus Dispatch sold to national newspaper chain*, COLUMBUS BUS. FIRST (June 3, 2015), https://www.bizjournals.com/columbus/news/2015/06/03/columbus-dispatch-sold-to-national-newspaper-chain.html; McKay Coppins, *A Secretive Hedge Fund is Gutting Newsrooms*, THE ATLANTIC (Oct. 14, 2021), https://www.theatlantic.com/magazine/archive/2021/11/alden-global-capital-killing-americas-newspapers/620171/; *see generally* Abernathy, *supra* note 42.

adhering to editorial standards becomes more challenging with fewer resources.[89]

Finally, these declines in the quantity and quality of journalism trigger declines in **Trust** and **Accountability.** As discussed above, mere errors in journalism harm credibility—and errors become more likely as the emphasis to "do more with less" increases.[90] But trust also diminishes as the general quality of the paper declines, and the boundaries between advertising and news are perceived to blur with the increasing pressure to make money.[91]

Meanwhile, fewer reporters means a weakened observer effect that drives down journalism's accountability function. "Legislatures function a lot more honestly when there's more of us there watching them," says Steve Cavendish, journalist and former editor of the Nashville Scene and Washington City Paper. "[W]ith fewer statehouse reporters, fewer people covering local governments, the problem is the things that we don't know that have happened."[92] The democratic effect crumbles as well. With less information being reported about the goings-on in government, there is less information for the public to use to inform themselves. Thus, voters are less able to hold their politicians and other local leaders accountable through the democratic process. Finally, because there is diminished trust in a diminished media, the reporting that does take place may not be received as credible, further undermining the ability of the news to serve its accountability function. And because the public does not receive the news as being credible, the observer effect that restrains public officials is further undermined.

2. The Nationalization of the News (and Polarization of Audiences)

The second and perhaps even more devastating impact of this diminished **Advertising Revenue** is that it undercuts the **Viability of a Broad-Based Local News Ecosystem**. Consequently, fewer communities have **Access to Trustworthy News**. This happens because local news was

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[89] The discipline of verification, for example, becomes more challenging when there are fewer editors and higher pressure to publish more content more quickly. *See* KOVACH & ROSENSTIEL, *supra* note 37, at 55.

[90] Damian Radcliffe & Jaycie Schenone, *Doing more with less: Seven practical tips for local newsrooms to strrrrretch their resources*, NIEMAN LAB (Nov. 15, 2019, 9:21 AM), https://www.niemanlab.org/2019/11/doing-more-with-less-seven-practical-tips-for-local-newsrooms-to-strrrrretch-their-resources/.

[91] *See, e.g.,* M&M Global Staff, *BuzzFeed denies advertiser pressure led to deleted Dove and Hasbro posts*, MMG (April 13, 2015), http://www.mandmglobal.com/buzzfeed-denies-advertiser-pressure-led-to-de/; Howard Kurtz, *'Ethical Iceberg' Seen In L.A. Times Scandal Probe*, WASH. POST (Dec. 21, 1999), https://www.washingtonpost.com/archive/lifestyle/1999/12/21/ethical-iceberg-seen-in-la-times-scandal-probe/3715e6ea-2523-494e-b001-66919381ec7c/.

[92] PEN AMERICA, *supra* note 36, at 11.

structurally dependent on advertising revenue, and the lone advantage it once had in the advertising market—access to a local audience—was entirely seized by more effective means of online advertising.[93] "Many newspaper executives and print publishers have argued that local newspaper websites are valuable because they (supposedly) reach a local audience," writes Matthew Hindman in *The Internet Trap*. He continues:

> The problem is that location targeting through property targeting [such as by buying ads in local newspapers] is, by modern standards, extremely crude and inefficient. Nearly everyone who visits local newspaper sites also visits the most popular sites. Potential local customers can be found more cheaply and efficiently on Yahoo! or Facebook than on the local newspaper website.[94]

What this means in a platform-based public discourse is that the vast majority of local news organizations are simply unable to compete. By definition, the maximum market size of a local news organization is too limited to be attractive to advertisers. And as a result, many such organizations close, and those that survive become shells of themselves.[95]

The consequence of the local news ecosystem's collapse in a platform-based public discourse, of course, is that the traditional defenses against information pollution collapse in the communities where local news used to thrive. The production of reliable, editorially independent journalism dwindles as newspapers fold or exist in severely diminished form. "Research shows that even purportedly local news is often not local at all," Pickard writes.[96] And the once widespread accessibility to that journalism disappears; news that is not produced is not accessible and the news that is left is often made less accessible as paywalls are erected and print deliveries decline.[97]

As local newspapers wither away, the proportion of our news media ecosystem focused on national news increases, leading to a **Nationalization of the News Ecosystem**. "More and more, Americans are turning away from the media outlets that are most likely to provide a modicum of state or local coverage," writes Dan Hopkins, author of *The Increasingly United States: How and Why Political Behavior Nationalized*.[98] "They are substituting Fox

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[93] *See infra* Part III.

[94] MATTHEW HINDMAN, THE INTERNET TRAP 57 (2018).

[95] Abernathy, *supra* note 42, at 12–13.

[96] PICKARD, *supra* note 41, at 86.

[97] *Infra* Part II.b.iii.

[98] Dan Hopkins, *All Politics Is National Because All Media Is National*, FIVE THIRTY EIGHT (June 6, 2018, 1:36 PM), https://fivethirtyeight.com/features/all-politics-is-national-because-all-media-is-national/.

News (or maybe FiveThirtyEight) for the Fayetteville Observer, and The New York Times' website for the Nevada Appeal."[99]

This nationalization has two primary effects. First, as it increases, the **Accountability Function** decreases because there are fewer local news organizations reporting on the activity of local governments and providing the information people need to be informed voters. "Research shows that voters in news deserts tend to base their vote more on national than local news and thus follow 'partisan heuristics' that lead to increased polarization," writes Pickard.[100] Additionally, according to a PEN America report "[a]s national news gains influence, voters become less informed about local politics, and more polarized, which increases the likelihood of voting along party lines."[101]

Second, because the news is increasingly focused on national issues, it increases the distance between news consumers and the news they consume, which further decreases **Trust in Traditional Publishers** by the public.[102]

3. Insufficient Funds: No Business Model in Sight

Given the consequences of the decreased **Financial Viability of the Advertising-Based Business Model**, news organizations desperately focus on increasing the **News Ecosystem's Reliance on Alternative Revenue Streams**. These efforts generally coalesce around three primary alternatives to advertising: subscriptions (like the *New York Times*), non-profit and donation-based funding (like *ProPublica*), and public funding (like *NPR* or the *BBC*).[103] Each of these models are viable for certain types of news organizations, but not others, and require tradeoffs with key defenses against information pollution in a healthy news ecosystem: **Accessibility to the News**, the **Accountability Function of the News**, and **Trust in the News** by the public.[104] While there continues to be entrepreneurship and innovation in this space, the reality of the present situation is that none of these **Alternative Revenue Streams** have been able to come close to making up for the lost **Advertising Revenue**. Between 2006 and 2020, newspapers lost stands at

[99] *Id.*
[100] PICKARD, *supra* note 41, at 100.
[101] PEN AMERICA, *supra* note 36 at 15.
[102] Schudson, *supra* note 69.
[103] PICKARD, *supra* note 41, at 42.
[104] *See* Elizabeth Hansen, Emily Roseman, Matthew Spector & Joseph Lichterman, *Business Models for Local News: A Field Scan*, SHORENSTEIN CTR. AT HARV. KENNEDY SCH. (Sep. 6, 2018), https://shorensteincenter.org/business-models-field-scan/ (elaborating on the strengths and weaknesses of different news business models).

approximately $40 billion in advertising revenue.[105] To make up for it, nonprofit funding has committed less than $500 million.[106] Subscription revenue, while showing signs of promise for a small subset of national news organizations, has remained flat since 2008.[107]

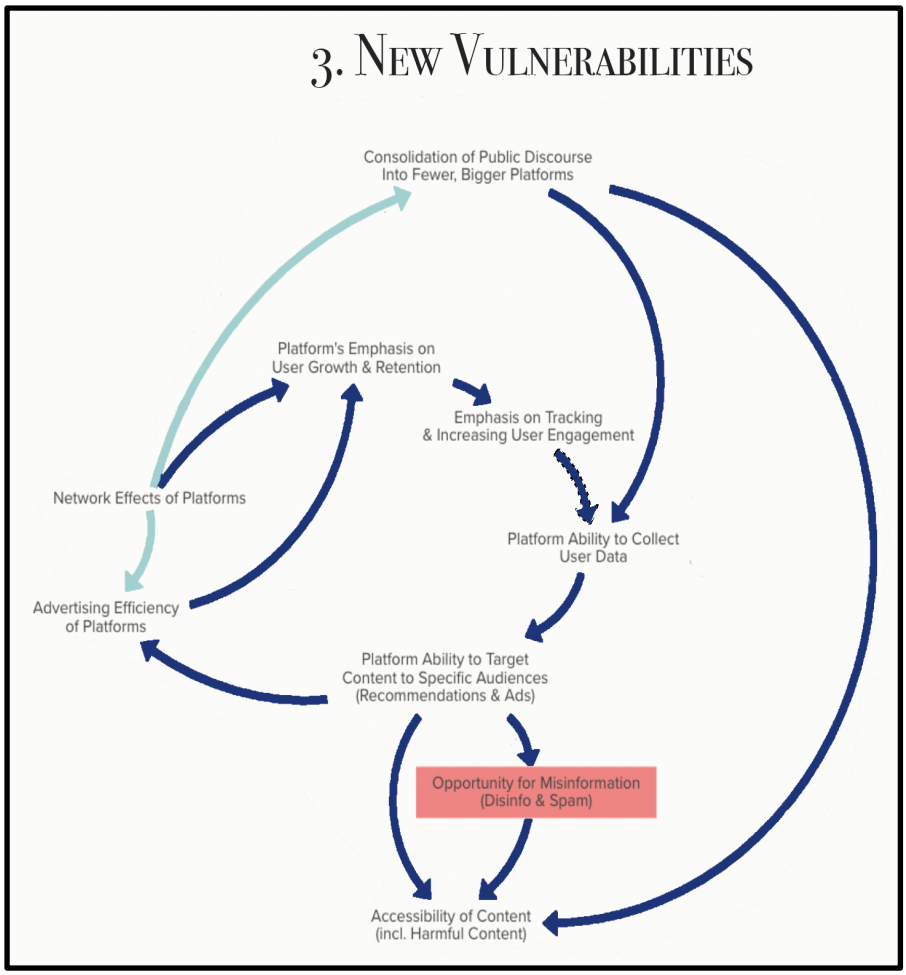
So where does that leave news organizations? As you can see in the Map, when the **Competitiveness of Traditional Publishers in the Advertising Market** collapses, in the absence of other revenue streams, all the elements underlying the defenses that traditionally protected the integrity of our public discourse collapse as well: the **Proclivity to Prioritize Public Service Over Business Interests**, **Accessibility**, **Trust in the News**, and the **Accountability Function**. And as they diminish, the public's vulnerability to the harms of information pollution increase.

[105] Michael Barthel & Kirsten Worden, *Newspapers Fact Sheet*, PEW RSCH. CTR. (June 29, 2021), https://www.pewresearch.org/journalism/fact-sheet/newspapers/.

[106] Matthew Nisbet, et al., *Funding the News: Foundations and Nonprofit Media*, SHORENSTEIN CTR. (June 18, 2018), https://shorensteincenter.org/funding-the-news-foundations-and-nonprofit-media/.

[107] Barthel, *supra* note 105.

III. NEW VULNERABILITIES: THE EMERGENT ROLE OF DATA



In Part II, the paper explored how the shift from a publisher-based public discourse to a platform-based public discourse degraded our traditional defenses against the harms of information pollution. In this Part, the focus shifts to an introduction of the emergent role for data in our now-digital platform-based public discourse. Specifically, the winner-take-all nature of digital markets subject to network effects increased the incentive of platforms to collect and use data to drive user growth and retention, including through the use of recommendation algorithms and targeted advertising capabilities. This emergent role had two major consequences: (1) it created new vulnerabilities to pollution of the public discourse, and (2) it accelerated the degradation of traditional defenses against information pollution. This Part first explains the **Emergent Role of Data** and then explores its consequences.

A. The Emergent Role of Data

When critiquing platforms' role in distorting our public discourse, you often hear that "the business model is the problem"[108] and that platforms need to de-emphasize their focus on engagement "in a relentless pursuit of profit."[109] "We argue that companies' failures to staunch the flow of problematic content and disinformation online is rooted in [targeted advertising and algorithmic] systems and the surveillance-based business models that they serve," reads an exemplary report from Ranking Digital Rights.[110] Even platforms' staunchest defenders concede that "data-driven personalized services" and "personalized digital advertising" raise "issues to be resolved and questions to be answered."[111] Without taking a side in the debate, however, this Part seeks to contextualize the critique by explaining how those engagement-based algorithmic systems and business models arise from a distinct feature of the modern Internet: its tendency to reward **Network Effects**.

The fundamental feature of markets subject to network effects is that they tend to be winner-take-all and, consequently, massively drive up the stakes of competition. "Network effects generate a positive feedback loop that can allow the first product or service that taps into those effects to build an unassailable competitive advantage," writes Reid Hoffman, founder of LinkedIn, in *Blitzscaling: The Lightning-Fast Path to Building Massively Valuable Companies*.[112] The U.S. government, for its part, agrees, though it sees this feature of digital markets in a different light:

> Certain features of digital markets—such as network effects, switching costs, the self-reinforcing advantages of data, and increasing returns to scale—make them prone to winner-take-all economics. As a result, many technology markets 'tip' in favor of one or two large companies, shifting "the competitive process from competition *in* the market to competition *for* the

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[108] Rachel Lerman, *Q&A: Ex-Googler Harris on How Tech 'Downgrades' Humans*, AP NEWS (Aug. 10, 2019), https://apnews.com/article/technology-business-data-privacy-apple-inc-dea7f32d16364c6093f19b938370d600.

[109] Nick Clegg, *You and the Algorithm: It Takes Two to Tango*, MEDIUM (Mar. 31, 2021), https://nickclegg.medium.com/you-and-the-algorithm-it-takes-two-to-tango-7722b19aa1c2.

[110] *It's the Business Model: How Big Tech's Profit Machine is Distorting the Public Sphere and Threatening Democracy*, Ranking Digital Rights (2020), https://rankingdigitalrights.org/its-the-business-model/.

[111] Clegg, *supra* note 109 ("There are clearly issues to be resolved and questions to be answered.").

[112] REID HOFFMAN & CHRIS YEH, BLITZSCALING: THE LIGHTNING-FAST PATH TO BUILDING MASSIVELY VALUABLE COMPANIES 11 (2018).

market."[113]

Thus, because of these existential competitive stakes, the **Network Effects of Platforms** make **User Growth and Retention** the runaway top priority for any platform. "A key element of leveraging network effects is the aggressive pursuit of network growth and adoption," Hoffman writes.[114] But "you also have to focus on retention. Bringing new users in through the front door doesn't help you grow if they immediately turn around and leave."[115] Consequently, he continues, "Being first to launch in a market might earn you congratulations on being a product visionary, but if you aren't also the first to scale, you'll end up as a footnote in a Wikipedia article about your competitor who did."[116] This relentless focus on growth and scale is what differentiates the winners in digital markets—Facebook, Google, Twitter, and others—from those relegated to the footnotes. "Even though the stories of their companies' rise were very different in many ways," Hoffman writes, "the one thing they all had in common was an extreme, unwieldy, risky, inefficient, do-or-die approach to growth."[117]

To achieve that **User Growth & Retention**, companies must, of course, be able to measure it, a pressure that increases their **Emphasis on Tracking & Increasing User Engagement**. As Sequoia Capital emphasizes to the companies it invests in, "The unifying theme [for improving user retention] across all populations is to increase engagement. . . . engagement drives retention."[118] While network effects help with size, it is engagement, that is, driving up people's activity on the platform, which leverages network effects' potential.[119] This emphasis on user engagement helps platforms understand how often people engage with the platform generally and with specific content or features on the platform.[120] But before these growth and retention efforts can happen, write Jeffrey Bussgang and Nadav Benbarak in the Harvard Business Review, "the [platform] needs to make sure the right

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[113] STAFF OF H. COMM. ON THE JUDICIARY, 117TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS 28 (Comm. Print 2020).

[114] HOFFMAN & YEH, *supra* note 112, at 69.

[115] *Id*. at 61.

[116] *Id*. at 124.

[117] *Id*. at 14.

[118] Data Science Team, *Retention*, SEQUOIA CAP., https://articles.sequoiacap.com/retention (last visited Feb. 15, 2023).

[119] *See* James Currier, *The Network Effects Bible*, NFX (July 2019), https://www.nfx.com/post/network-effects-bible ("Remember that network effects don't come from the size of the network, but from overall usage.").

[120] *Supra* note 106 ("Retention can be used to understand how well your product is growing overall, to evaluate its use among subsets of users and to determine how specific features are performing.").

data infrastructure is in place."[121] Thus, the **Emphasis on Tracking & Increasing User Engagement** leads to the company investing in its **Ability to Collect and Analyze User Data.** "Data is the fuel of the growth function and growth teams invest a significant share of their resources to create the infrastructure that enables analysis of user behavior, scientific experimentation, and targeted promotions."[122]

Network Effects once again play a crucial role in underpinning this element of the system. Not only does the winner-take-all nature of network effects incentivize a disproportionate focus on **User Growth**, but as a winner emerges, its advantage grows because of its increased **Ability to Collect User Data**. Platforms have a "crucial advantage: *more data*," writes Hindman:

> Building infrastructure to collect, store, organize, analyze and constantly update data is an enormous investment. This is not something that a small startup could have done nearly as successfully, and not just because of the money, hardware, and expertise required. Data come from monitoring users, and startups do not have nearly as many users to monitor.[123]

Proving the point, the U.S. House investigation concluded that this advantage was essential to the eventual dominance of the social media market by Facebook: "[B]y virtue of its significant number of users, Facebook has access to and collects more user data than its competitors."[124]

Finally, armed with all this data, the dominant platform improves its **Ability to Target Content to Specific Audiences** by creating and training algorithms that support their growth, retention, and engagement goals.[125] As Hoffman writes of Facebook's recommendation algorithms:

> Facebook doesn't just insert sponsored updates at random. The company knows your interests better than you do, based on all the items you've ever clicked on, liked, or otherwise engaged with. It can carefully target advertisements it shows

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[121] Jeffrey Bussgang & Nadav Benbarak, *Every Company Needs a Growth Manager*, HARV. BUS. REV. (Feb. 19, 2016), https://hbr.org/2016/02/every-company-needs-a-growth-manager.

[122] *Id*.; *see also* Staff of H. Comm. on the Judiciary, *supra* note 113, at 32 ("Data allows companies to target advertising with scalpel-like precision, improve services and products through better understanding of user engagement and preferences, and more quickly identify and exploit new business opportunities.").

[123] HINDMAN, *supra* note 94, at 50.

[124] *See also* House Subcommittee on Antitrust, *supra* note 113.

[125] HINDMAN, *supra* note 94 ("Recommendation systems are one of the most powerful tools available for sites to keep and grow their traffic. . .").

> you based on your individual habits and the context of what surrounds them in your feed.[126]

And these algorithms have been deployed beyond targeted advertisements[127] to recommend organic content as well.[128]

Once again, the winner-take-all nature of markets subject to network effects compounds this ability to target content. "Facebook's data dominance creates self-reinforcing advantages through two types of 'feedback loops'," concludes the House investigation:

> First, by virtue of its significant number of users, Facebook has access to and collects more user data than its competitors. And second, Facebook uses this data to create a more targeted user experience, which in turn attracts more users and leads those users to spend more time on the platform.[129]

And this improved targeting by algorithms that runs on these vast supplies of data—which flows from the winner-take-all dynamics of network effects—has the ultimate effect of further improving the **Advertising Efficiency of Platforms** and driving the platform's profitability.[130]

Hoffman summarizes the virtuous cycle well: "Facebook's powerful network effects allow the site to attract its users, but its innovation of the news feed has made it a world-class business."[131] He writes, "The power of the newsfeed comes from its ability to drive user engagement, which in turn drives both advertising revenue and long-term retention."[132] It is a business

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[126] HOFFMAN & YEH, *supra* note 112, at 90.

[127] Karen Hao, *How Facebook Got Addicted to Spreading Misinformation*, MIT TECH. REV. (Mar. 11, 2021), https://www.technologyreview.com/2021/03/11/1020600/facebook-responsible-ai-misinformation/ ("[Facebook] could develop models that learned to infer the existence not only of broad categories like 'women' and 'men,' but of very fine-grained categories like 'women between 25-34 who liked Facebook pages related to yoga,' and targeted ads to them.").

[128] *Id*. ("Just as algorithms could be trained to predict who would click what ad, they could also be trained to predict who would like or share what post, and then give those posts more prominence.").

[129] *Id*. ("[Facebook's] algorithms were creating much faster, more personalized feedback loops for tweaking and tailoring each user's news feed to keep nudging up engagement numbers.").

[130] House Subcommittee on Antitrust, *supra* note 113 ("the value of online platforms that facilitate advertising . . . increases with the number of users, as advertisers gain access to a larger consumer base and therefore to a larger trove of consumer data."); *Id*. ("With more users and usage time than any other social network, Facebook provides the largest audience and the most valuable data for social network online advertising.").

[131] HOFFMAN & YEH, *supra* note 112, at 90.

[132] *Id*.

model based on the **Emergent Role of Data** that has since been replicated by YouTube, Twitter, LinkedIn, and TikTok—the other platforms that mediate platform-based public discourse. It is indeed the business model, but its roots are in network effects.

B. Consequences of the Emergent Role of Data

This Part will discuss two consequences of the **Emergent Role of Data** in the public discourse. First, it will address how the increased **Targeting** capabilities of the platforms create a new and significant vulnerability to information pollution in the public discourse. Specifically, the engagement-optimizing goals of these targeting capabilities facilitate the proliferation of information pollution. And second, as the winner-take-all nature of the market for platforms **Consolidates the Public Discourse** onto a handful of platforms, the potential for the accessibility and discoverability of information pollution on those platforms increases—a risk that is sharpened by the increased targeting capabilities of platforms.

The **Ability to Target Content to Specific Audiences** helps platforms connect people to content they are more likely to enjoy or be interested in. And because most people do not want their Facebook Newsfeed to look like the front page of a newspaper, that content is not necessarily correlated with its credibility or reliability. Mark Zuckerberg himself has acknowledged that "no matter where we draw the lines for what is allowed [under Facebook's content policies], as a piece of content gets close to that line, people will engage with it more on average . . . ."[133] In other words, the types of posts that might facilitate a deliberative and productive public discourse are, without intervention, consistently outperformed by hate speech, porn, death threats, and misleading or false claims and fake accounts.[134] Of course, platforms do intervene and have made significant strides in countering this dynamic.[135] But the disproportionate amplification of such content nonetheless remains a persistent challenge.[136] While other

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[133] Mark Zuckerberg, *A Blueprint for Content Governance and Enforcement*, FACEBOOK (May 5, 2021), https://www.facebook.com/notes/751449002072082/.

[134] *See id*. (explaining that "[o]ne of the biggest issues social networks face is that, when left unchecked, people will engage disproportionately with more sensationalist and provocative content").

[135] *See, e.g.,* Clegg, *supra* note 98; Yoel Roth, *Introducing Our Crisis Misinformation Policy*, Twitter (May 19, 2022), https://blog.twitter.com/en_us/topics/company/2022/introducing-our-crisis-misinformation-policy; *How Does YouTube Manage Harmful Content?*, YOUTUBE, https://www.youtube.com/howyoutubeworks/our-commitments/managing-harmful-content/ (last visited Feb. 15, 2022).

[136] *See generally, The Facebook Files*, WALL STREET J. (2021),

factors, including "human nature,"[137] are certainly at play, the algorithms that serve users relevant, personalized content—"the magic of social media, the thing that differentiates it from older forms of media"[138]—also unleash new plumes of information pollution into our public discourse.

These plumes emerge for two primary reasons. First, recommendation systems tend to promote engaging content.[139] And because many forms of information pollution—misleading and false information, in particular, but also harassment and hate speech—are more engaging, platforms' algorithms will tend to amplify them.[140] Second, targeted advertising allows anyone with money to target certain types of information pollution, particularly false or misleading information, to audiences most susceptible to it.

1. The Pitfalls of Recommendation Systems

First, because platforms' recommendation systems must, as a competitive matter, optimize for some minimum level of engagement,[141] they necessarily tend to amplify policy-violating content, even if they employ measures to lessen the harms associated with it.[142] In practice, this is exactly what has happened to platform-based public discourse as recommendation algorithms have amplified various forms of information pollution.[143]

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https://www.wsj.com/articles/the-facebook-files-11631713039.

[137] Clegg, *supra* note 98 (noting "the presence of bad and polarizing content on private messaging apps — iMessage, Signal, Telegram, WhatsApp — used by billions of people around the world" and that "[n]one of those apps deploy content or ranking algorithms.").

[138] *Id*.

[139] Although platforms have dialed down their reliance on engagement metrics, the extent of their influence remains a relevant input. *Id*. ("Since the early days of the platform, the company has relied on explicit engagement metrics . . . to determine which posts [users] would find most relevant. But the use of those metrics has evolved and other signals Facebook considers have expanded."). Indeed, they must remain an influential input due to the network effects inherent in winner-take-all dynamics of the market for social. *See infra Section* III.a.

[140] Zuckerberg, *supra* note 133.

[141] *See* Part III.a.

[142] Hao, *supra* note 127. (describing how Facebook's algorithms "were designed to make people share and engage with as much content as possible by showing them things they were most likely to be outraged or titillated by."). *But see* Clegg, *supra* note 98 ("If [Facebook] prioritized keeping you online an extra 10 or 20 minutes, but in doing so made you less likely to return in the future, it would be self-defeating.").

[143] *See, e.g.*, Hao, *supra* note 112 ("64% of all extremist group joins are due to our recommendation tools,' the presentation said, predominantly thanks to the models behind the 'Groups You Should Join' and 'Discover' features.") (quoting internal Facebook presentation by a company researcher); Alex Hern, *TikTok Algorithm Directs Users to Fake News About Ukraine War, Study Says*, THE GUARDIAN (March 21, 2022, 9:12 AM),

In an infamous example from the 2016 election, content creators in Macedonia recognized that if they could drive traffic to their pages, they could monetize that traffic.[144] To do so, they published false content about the election with headlines like "The pope endorses Donald Trump" that were designed to, and actually did, draw high levels of engagement—and consequently were promoted by the platforms' algorithms.[145] In the 2020 election, these "Eastern European troll farms" were at it again.[146] An internal Facebook report found that the trolls' content reached 140 million Americans each month, 75 percent of whom never followed their pages; Facebook's content recommendation system had instead pushed it into their news feeds.[147] The report's author concluded that "it is our platform that is choosing to give [these troll farms] an enormous reach."[148]

The consequence of stories like these and the incentives that underpin them is that the public discourse gets warped. Although studies about the effects of misinformation and other forms of information pollution often reach contradictory conclusions,[149] there can be little doubt that misinformation has some effect. Platforms have become our dominant source of information;[150] as a natural result of the democratization of publishing, they have become polluted with low-quality and unreliable information.[151] As a rational result of the incentives of companies competing in markets subject to network effects, they must optimize for some minimum level of engagement, which they do through the use of content recommendation algorithms. Efforts to mitigate the consequences of those incentives are undoubtedly important, but they cannot eliminate either the incentives or their consequences.

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https://www.theguardian.com/technology/2022/mar/21/tiktok-algorithm-directs-users-to-fake-news-about-ukraine-war-study-says.

[144] Chris Woolf, *Kids in Macedonia made up and circulated many false news stories in the US election*, THE WORLD (Nov. 16, 2016), https://theworld.org/stories/2016-11-16/kids-macedonia-made-and-circulated-many-false-news-stories-us-election.

[145] *Id*.

[146] Karen Hao, *Troll farms reached 140 million Americans a month on Facebook before 2020 election, internal report shows*, MIT TECH. REV. (Sept. 16, 2021), https://www.technologyreview.com/2021/09/16/1035851/facebook-troll-farms-report-us-2020-election/.

[147] *Id*.

[148] *Id*.

[149] Gideon Lewis-Kraus, *How Harmful is Social Media?*, NEW YORKER (June 3, 2022), https://www.newyorker.com/culture/annals-of-inquiry/we-know-less-about-social-media-than-we-think.

[150] Mason Walker & Katerina Eva Matsa, *News Consumption Across Social Media in 2021*, PEW RSCH. CTR. (Sept. 20, 2021), https://www.pewresearch.org/journalism/2021/09/20/news-consumption-across-social-media-in-2021/.

[151] *See* Part I.

2. The Weaponization of Targeted Ads

Second, the ability to buy and target ads at highly niche audiences empowers anyone with enough motivation to weaponize information pollution by directing it specifically at the audiences most likely to be susceptible to it. In early 2020, an internal presentation at Facebook about the risks of political advertising succinctly addressed the challenge: "We . . . expect custom audiences for political and social issue ads to be used to narrowcast misinfo to vulnerable communities."[152] Reaching a similar conclusion prior to banning political ads on Twitter in 2019, then-CEO Jack Dorsey observed that "Internet political ads present entirely new challenges to civic discourse: machine learning-based optimization of messaging and micro-targeting, unchecked misleading information, and deep fakes. All at increasing velocity, sophistication, and overwhelming scale."[153]

In likely the most infamous illustration of these risks, Russian agents turned to targeted advertising in their efforts to influence the 2016 U.S. election.[154] While the effects of their efforts remain debatable, the fact that these influence-campaigns are trending is not up for debate. According to a 2021 study of political advertising, "political operatives are using such data to carry out increasingly granular geo-targeted advertising—sometimes so granular that it is used to target one individual."[155]

3. The Consolidation of the Public Discourse onto Platforms

These new opportunities for information pollution are intensified because of the consolidation of the public discourse onto a few dominant platforms. As the winner-take-all competitions described above have played out, were are left with four dominant platforms serving four distinct markets: Meta (Facebook & Instagram) for social networking, YouTube for general

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[152] Cristiano Lima, *Facebook knew ads microtargeting could be exploited by politicians. It accepted the risk.*, WASH. POST (Oct. 26, 2021), https://www.washingtonpost.com/politics/2021/10/26/facebook-knew-ads-microtargeting-could-be-exploited-by-politicians-it-accepted-risk/.

[153] Jack Dorsey (@jack), TWITTER (Oct. 30, 2019), https://twitter.com/jack/status/1189634369016586240.

[154] Scott Shane & Vindu Goel, *Fake Russian Facebook Accounts Bought $100,000 in Political Ads*, N.Y. TIMES (Sept. 6, 2017), https://www.nytimes.com/2017/09/06/technology/facebook-russian-political-ads.html.

[155] Katie Joseff, Joel Carter & Samuel Woolley, *The disturbing implications of increasingly narrow political ad targeting*, BROOKINGS: TECH STREAM (Feb. 11, 2021), https://www.brookings.edu/techstream/the-disturbing-implications-of-increasingly-narrow-political-ad-targeting/.

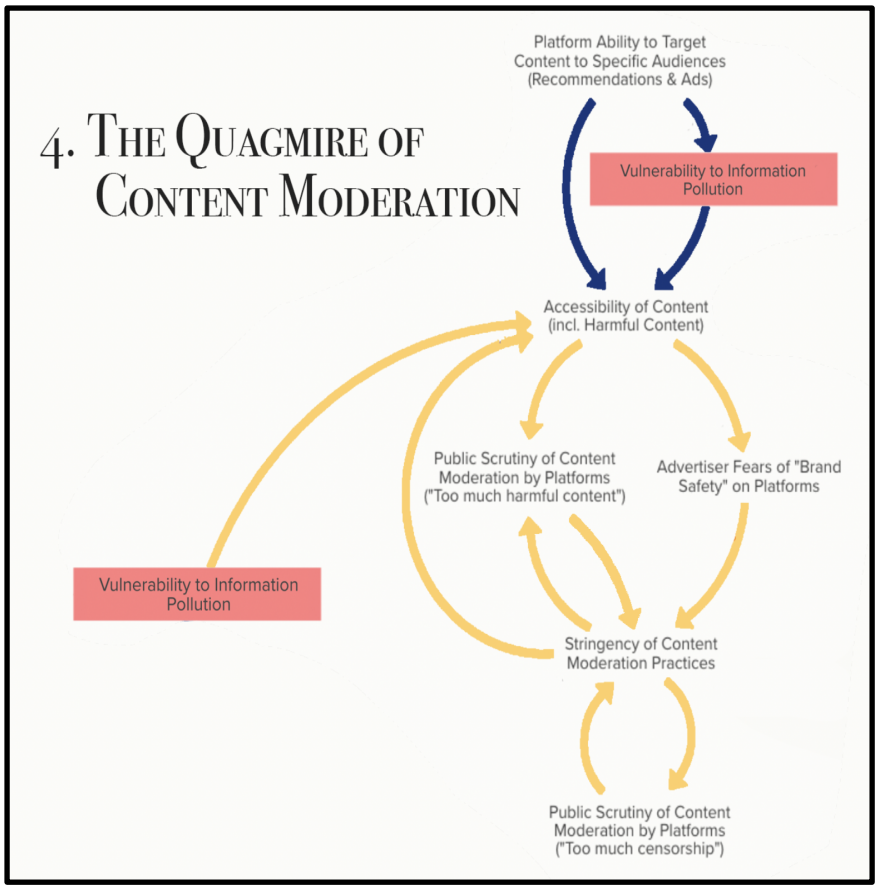
video content, TikTok for short-form video content, and Twitter for real-time content. "[O]ver the last fifteen years, [these] companies . . . have established themselves as dominant platforms in global content sharing and online speech," writes Kate Klonick in *The New Governors*. "These platforms are both the architecture for publishing new speech and the architects of the institutional design that governs it. . . . [T]hese architects are free to choose which values they want to protect—or to protect no values at all."[156]

As a consequence, nearly every participant and every piece of content in the broad spectrum of the public discourse—from the extreme to the moderate, the fringe to the mainstream—communes in the same few spaces; a far cry from the decentralized nature of the publisher-based public discourse. Alone, this feature might only marginally facilitate the spread of information pollution by collating all content on a single searchable platform. But coupled with recommendation algorithms and their propensity to amplify policy-violating content,[157] the **Discoverability and Accessibility** of content that would otherwise wither at the margins substantially increases. The takeaway is that the coupling of the **Platforms' Ability to Target Content** with the **Consolidation of the Public Discourse onto Platforms** combines to exacerbate the harms associated with each individually.

[156] Kate Klonick, *The New Governors: The People, Rules, and Processes Governing Online Speech*, 131 HAR. L. REV. 1598, 1617 (2018) (article was written prior to TikTok's rise).

[157] Zuckerberg, *supra* note 133.

IV. THE QUAGMIRE OF CONTENT MODERATION



In Parts I to III, we have seen how the transition from a publisher-based to a platform-based public discourse has diminished our traditional defenses against information pollution by degrading the news ecosystem, and has increased vulnerabilities to information pollution through the **Emergent Role of Data** on platforms. In this Part, I will show how (a) the consolidation of the entire public discourse onto a small number of massive platforms has assigned those platforms the task of moderating the increased accessibility of low-quality and harmful information, and (b) the Sisyphean nature of that task has trapped the public discourse in an interminable loop that focuses the discourse on unwinnable debates over what content is and is not acceptable in the public discourse.

A. Platforms Must Moderate the Public Discourse

First, because of the shift to a platform-based public discourse and

consolidation of the public discourse onto fewer, larger platforms, all the previously atomized pieces of content on the Internet become more easily **Accessible** through these platforms. And, at least initially, that includes everything—the good, the bad, and the ugly. This indiscriminate proliferation of information of all stripes forces the platforms to moderate—that is, remove or deprioritize—content in order to minimize the visibility of low-quality or objectionable content.

Initially, platforms take it upon themselves to moderate content, largely because of commercial pressures to (a) satisfy **Advertisers' Fears of Brand Safety**, and (b) attract, engage, and retain users. As Tarleton Gillespie writes in *Custodians of the Internet*, "Platforms must, in some form or another, moderate: both to protect one user from another, or one group from its antagonists, and to remove the offensive, vile, or illegal—as well as to present their best face to new users, to their advertisers and partners, and to the public at large."[158] Kate Klonick, a professor of internet law at St. John's University School of Law, is more direct:

> [T]he primary reason companies take down obscene and violent material is the threat that allowing such material poses to potential profits based in advertising revenue. Platforms' 'sense of the bottom-line benefits of addressing hate speech can be shaped by consumers' — i.e., users' — expectations.' If a platform creates a site that matches users' expectations, users will spend more time on the site and advertising revenue will increase. Take down too much content and you lose not only the opportunity for interaction, but also the potential trust of users. Likewise, keeping up all content on a site risks making users uncomfortable and losing page views and revenue.[159]

While this initial content moderation is sufficient to enable the platforms to continue growing—by preventing users from fleeing a platform inundated with objectionable material—a second pressure soon arrives: **Public Scrutiny of Content Moderation**, which pressures platforms to raise the moderation bar higher, responding to the objectionable content that remains (**"Too much harmful content"**). In response, these pressures lead to the more formal development of content moderation rules, policies, and teams, which raises the **Stringency of Content Moderation** practices. "Twitter's transformation from Internet hero for its blanket refusal to police users' content to Internet villain happened relatively swiftly," writes Klonick,

[158] TARLETON GILLEPSIE, CUSTODIANS OF THE INTERNET 5 (2018).
[159] Klonick, *supra* note 156.

as an example of this dynamic:

> Though public awareness of online hate speech and harassment was already growing, the GamerGate controversy in 2014 raised new levels of global awareness about the issue. As the least policed or rule-based platform, much of the blame fell on Twitter. By 2015, the change in cultural values and expectations began to be reflected in new public standards and policy at Twitter.[160]

Inevitably, however, backlash follows, as **Public Scrutiny of Content Moderation** from other constituencies pressures platforms to moderate less content because of the reality and perception that platforms are over-inclusive in their sweep and silence legitimate content as collateral damage of their content moderation activity (**"Too much censorship"**). "Stricter rules and more heavy-handed enforcement necessarily means more false positives," writes Evelyn Douek, a scholar of online speech issues at Stanford Law School.[161] "That is, more valuable speech will be taken down."[162] And this over-removal affects the full political and cultural spectrum of the public discourse. "[W]hen rules of propriety are crafted by small teams of people that share a particular worldview, they aren't always well suited to those with different experiences, cultures, or value systems," writes Gillespie.[163] The effects of content moderation, therefore, will be felt differently for a researcher at Microsoft like Gillespie as compared to "a pornographer or a terrorist, . . . a whistleblower, a drag queen, a Muslim, a lactation specialist, a sex educator, or a black antiviolence activist."[164] Such groups have as much of a right to participate in the public discourse, but "regularly run up against the rules the platform imposes. Moderation is meant to disappear, but it does so for some more than others."[165]

Consequently, people respond to such disparate treatment with understandable suspicion: "a Pew Research Center survey conducted in June finds that roughly three-quarters of U.S. adults say it is very (37%) or somewhat (36%) likely that social media sites intentionally censor political viewpoints that they find objectionable. Just 25% believe this is not likely the case."[166] Ultimately, Douek argues, "content moderation is now snowballing,

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[160] *Id*.

[161] Evelyn Douek, *More Content Moderation Is Not Always Better*, WIRED (June 2, 2021, 8:00 AM), https://www.wired.com/story/more-content-moderation-not-always-better/.

[162] *Id*.

[163] Gillespie, *supra* note 158.

[164] *Id*.

[165] *Id*.

[166] Emily A. Vogels, Andrew Perrin & Monica Anderson, *Most Americans Think Social*

and the collateral damage in its path is too often ignored."[167]

Whether or not the allegations of censorship have merit—sometimes they do and sometimes they do not—the allegations garner sufficient public support to force the platforms to respond because, again, aligning content moderation practices with user needs is an existential challenge for the platforms. So when sufficient backlash arises, the platforms respond by dialing back the stringency of their moderation efforts. Examples of this are the 2020 election[168], the publication of the Pulitzer Prize-winning "Napalm Girl" photo to Facebook[169], and Covid-19 related content.[170] Of course, reduced content moderation only increases the **Accessibility of Potentially Harmful Content**, starting the cycle over again.

B. The Impossibility of Content Moderation

This tug-of-war between various factions of user groups online regarding the appropriate amount of content moderation is the state of play of the public discourse. And platforms are ultimately stuck in the middle. Theoretically, this need not be a bad thing. A public discourse should not be made up of only people who agree with one another. And if this dynamic of recursive public scrutiny can find a healthy equilibrium, it has the opportunity to be a healthy feature of the platform-based public discourse. Unfortunately, because the debate is over the terms of debate—over which ideas are acceptable and which are not—and pits people directly against each other, a healthy equilibrium appears to be out of reach.

"Content moderation at scale is impossible to do well," Mike Masnick, a leading commentator on the technology sector's legal challenges, has said.[171] "More specifically, it will always end up frustrating very large

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Media Sites Censor Political Viewpoints, PEW RSCH. CTR. (Aug. 19, 2020), https://www.pewresearch.org/Internet/2020/08/19/most-americans-think-social-media-sites-censor-political-viewpoints/.

[167] Douek, *supra* note 161.

[168] *See* Kate Conger & Mike Isaac, *In Reversal, Twitter Is No Longer Blocking New York Post Article*, N.Y. TIMES (Updated April 17, 2021), https://www.nytimes.com/2020/10/16/technology/twitter-new-york-post.html (noting that "[w]ith just a few weeks to go before the Nov. 3 vote, the social media companies are continuing to shift their policies and, in some cases, are entirely reversing what they will and won't allow on their sites.").

[169] Gillespie, *supra* note 158, at 3 ("More than a week after the image was first removed, after a great deal of global news coverage critical of the decision, Facebook reinstated the photo.").

[170] Douek, *supra* note 161 ("Last week, for instance, Facebook reversed its policy and said it will no longer take down posts claiming Covid-19 is human-made or manufactured.").

[171] Mike Masnick, *Masnick's Impossibility Theorem: Content Moderation At Scale Is Impossible To Do Well*, TECHDIRT (Nov. 20, 2019, 9:31 AM),

segments of the population and will always fail to accurately represent the 'proper' level of moderation of anyone."[172] This is ultimately because, as Gillespie explains,

> [F]iguring out where and why to intervene means wading into some thorny questions: not just determining what is unacceptable, but balancing offense and importance; reconciling competing value systems; mediating when people harm one another, intentionally or otherwise; honoring the contours of political discourse and cultural taste; grappling with inequities of gender, sexuality, race, and class; extending ethical obligations across national, cultural, and linguistic boundaries; and doing all that around the hottest hot- button issues of the day.[173]

Masnick argues that this leaves platforms in an impossible situation: "No matter what path is chosen, it will end up being not ideal for a large segment of the population."[174]

Furthermore, content moderation practices respond to highly dynamic user and community norms. "What we're still in the middle of is how do we think about . . . the norms of behavior when what's appropriate is constantly reiterated," said Nicole Wong, a former lawyer for Google and Twitter.[175] "If you layer over all of that the technology change and the cultural, racial, national, [and] global perspectives, it's all just changing dramatically fast. It's enormously difficult to figure out those norms, let alone create policy to reflect them."[176]

This puts platforms in the position of making judgment calls about what is and is not socially appropriate, decisions that literally—and understandably controversially—set the terms for public debate in our platform-based public discourse.[177] Those terms, however, are necessarily enforced by imperfect algorithms because of the sheer number of participants involved. "[O]ne of the problems of content moderation that we've

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https://www.techdirt.com/2019/11/20/masnicks-impossibility-theorem-content-moderation-scale-is-impossible-to-do-well/.

[172] *Id*.

[173] Gillespie, *supra* note 158, at 10.

[174] Masnick, *supra* note 171.

[175] Klonick, *supra* note 156, at 1618 (quoting the author's telephone interview with Nicole Wong).

[176] Klonick, *supra* note 156; *see generally,* Gillespie, *supra* note 158.

[177] Masnick, *supra* note 171 ("By definition, content moderation is always going to rely on judgment calls, and many of the judgment calls will end up in gray areas where lots of people's opinions may differ greatly.").

highlighted over the years," Masnick writes, "is that to make good decisions you often need a tremendous amount of context, and there's simply no way to adequately provide that at scale in a manner that actually works."[178] Nonetheless, our public discourse is stuck with them. Because of the winner-take-all nature of the market for platforms, unsatisfied users have nowhere to go because everyone has no choice but to stay.[179]

So, given all of this, what can be done?

V. USING THE MAP: POLICY SOLUTIONS

The policy debates around platform regulation and the public discourse can be unwieldy. Is there too much or too little content moderation being done by platforms? Do their content moderation policies violate our First Amendment rights? Why do we still not understand how content recommendation algorithms operate? Can we slow down how quickly they amplify harmful content? What if we banned targeted advertising? Or broke up Big Tech? Or should we mandate platform interoperability instead? And what about local journalism? Should Big Tech fund it? Should the government?

Needless to say, there is a lot going on here. The discussion intersects with many fields—antitrust, the First Amendment, data privacy, intermediary liability, media regulation, the technology sector—each of which rightly believe themselves to have something meaningful to offer to the problem of information pollution. But without a framework for understanding how the individual solutions fit into the bigger picture, and how they can complement other solutions, they end up being considered competing policies, vying against one another for the scarce attention of policymakers. This Part shows how the Map provides such a framework by illustrating how distinct policy proposals target distinct elements of the Map. The list of proposals is by no means exhaustive; but the process of going through them shows how you can use the Map to analyze platform regulation. In the end, the lesson will hopefully be clear: Individually, any single policy proposal addresses only a slice of the problem and fails to address the complexity of the challenge. Cumulatively, however, they can work together as part of a multi-pronged policy program to comprehensively address information pollution.[180]

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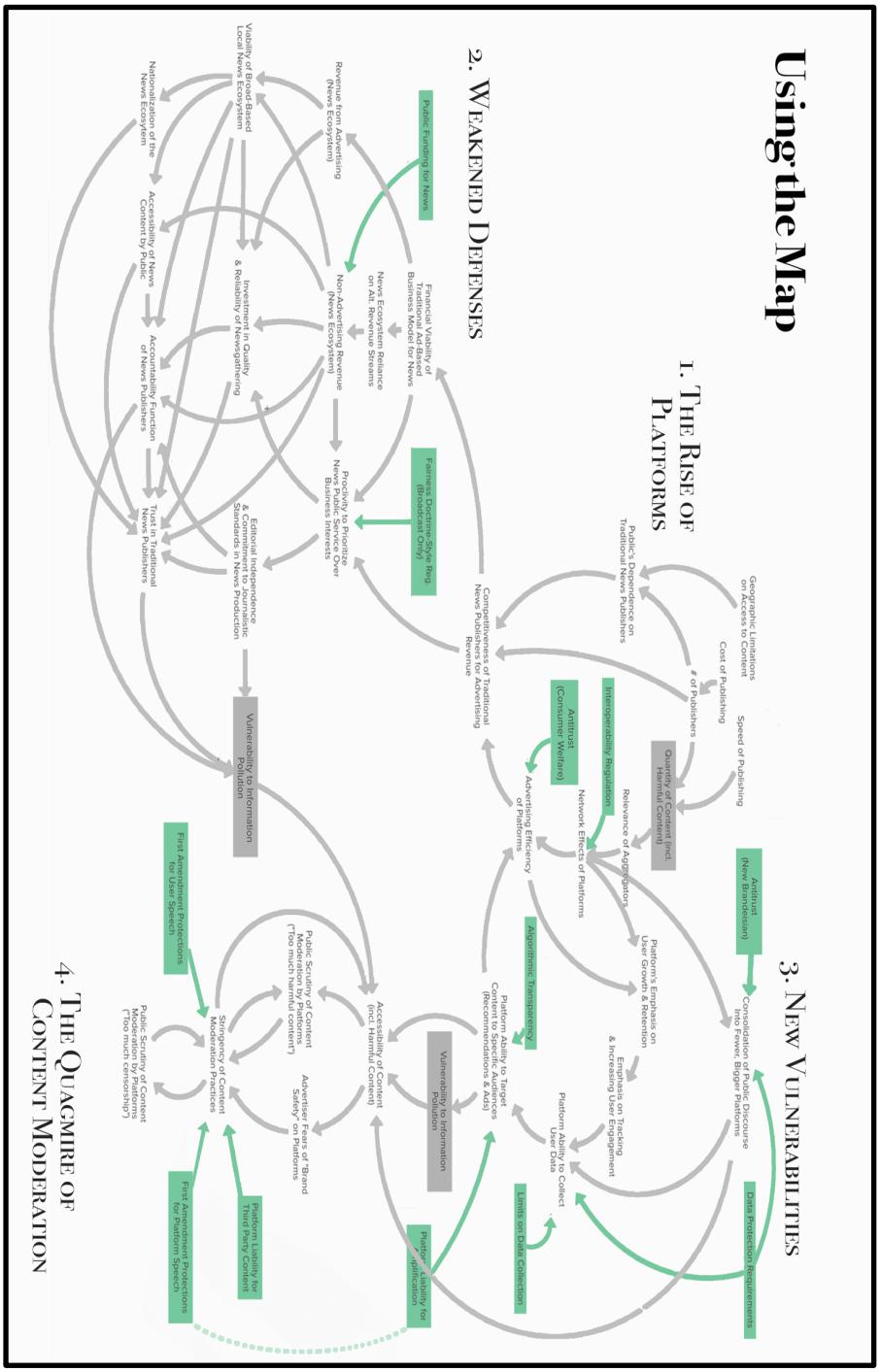
[178] Douek, *supra* note 161 ("This problem is exacerbated by the increased reliance on automated moderation to take down content at scale: These tools are blunt and stupid.").

[179] *See* Part II.

[180] A full explanation of the scope of each of these fields is beyond the scope of this paper. Instead, this section seeks to briefly summarize the spectrum of policy proposals within each field in order to illustrate the map's utility.


Using the Map
1. The Rise of Platforms
2. Weakened Defenses
3. New Vulnerabilities
4. The Quagmire of Content Moderation
Geographic Limitations on Access to Content
Cost of Publishing
Speed of Publishing
# of Publishers
Public's Dependence on Traditional News Publishers
Quantity of Content (incl. Harmful Content)
Relevance of Aggregators
Interoperability Regulation
Network Effects of Platforms
Antitrust (Consumer Welfare)
Advertising Efficiency of Platforms
Competitiveness of Traditional News Publishers for Advertising Revenue
Antitrust (New Brandeisian)
Consolidation of Public Discourse Into Fewer, Bigger Platforms
Data Protection Requirements
Platform's Emphasis on User Growth & Retention
Emphasis on Tracking & Increasing User Engagement
Platform's Ability to Collect User Data
Limits on Data Collection
Algorithmic Transparency
Platform Ability to Target Content to Specific Audiences (Recommendations & Ads)
Platform Liability for Amplification
Vulnerability to Information Pollution
Accessibility of Content (incl. Harmful Content)
Public Scrutiny of Content Moderation by Platforms ("too much harmful content")
Advertiser Fears of "Brand Safety" on Platforms
Suppression of Content Moderation Practices
Public Scrutiny of Content Moderation by Platforms ("too much censorship")
First Amendment Protections for User Speech
First Amendment Protections for Platform Speech
Platform Liability for Third Party Content
Public Funding for News
Fairness Doctrine-Style Reg (Broadcast Only)
Financial Viability of Traditional Ad-Based Business Model for News
News Ecosystem Reliance on Alt. Revenue Streams
Non-Advertising Revenue (News Ecosystem)
Revenue from Advertising (News Ecosystem)
Possibility to Prioritize News Public Service Over Business Interests
Investment in Quality & Reliability of Newsgathering
Editorial Independence & Commitment to Journalistic Standards in News Production
Accountability Function of News Publishers
Accessibility of News Content by Public
Nationalization of the News Ecosystem
Viability of Print-Based Local News Ecosystem
Trust in Traditional News Publishers
Vulnerability to Information Pollution

A. Targeting the Quagmire: What Speech Should Be Allowed?

1. Intermediary Liability

Intermediary liability is a field of law that governs the content that technology companies that carry third-party content can and cannot be held liable for hosting.[181] In the context of platforms, it primarily involves discussion of whether social media platforms can or should be held liable for illegal content posted by users on its platforms, and whether certain forms of information pollution like false or misleading information should be made illegal.[182] Thus, its expertise is generally deployed in the Quagmire of Content Moderation, where the debates focus on what content platforms decide to show users.[183] There are two primary strands of platform liability debates, the dynamics of which are briefly summarized here:

- ***Platform Liability for Third-Party Content:*** Section 230 shields platforms from liability for hosting unlawful third-party content.[184] As discussed above, efforts to either increase or decrease liability are therefore targeted specifically at raising or lowering the **Stringency of Content Moderation Practices**, respectively.[185] The key feature to consider here is that proposals limited to increasing or decreasing liability trigger the interminable feedback loop of **Public Scrutiny of Content Moderation Practices.**

- ***Platform Liability for Amplification:*** A creative alternative to increasing platforms' liability for hosting third-party content is attaching liability to the amplification of such content. Instead of focusing on the **Stringency of Content Moderation Practices,** this approach moves the regulatory focus higher upstream in the Quagmire of Content Moderation and concerns **Platforms' Ability**

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[181] Joris van Hoboken & Daphne Keller, *Design Principles for Intermediary Liability Laws*, Transatlantic Working Group (October 8, 2019), https://www.ivir.nl/publicaties/download/Intermediary_liability_Oct_2019.pdf.

[182] *Id*.

[183] *See* Part IV.

[184] Eric Goldman, *An Overview of the United States' Section 230 Internet Immunity*, The Oxford Handbook of Online Intermediary Liability (Forthcoming), https://ssrn.com/abstract=3306737; *see generally* Eric Goldman, *Want to Learn More About Section 230? A Guide to My Work*, TECH & MARKETING L. BLOG (July 1, 2020), https://blog.ericgoldman.org/archives/2020/07/want-to-learn-more-about-section-230-a-guide-to-my-work.htm.

[185] Meghan Anand et al., *All the Ways Congress Wants to Change Section 230*, SLATE (Mar. 23, 2021), https://slate.com/technology/2021/03/section-230-reform-legislative-tracker.html.

to Target Content to Specific Audiences. Because engagement-based content-recommendation algorithms disproportionately amplify information pollution, this approach would decrease platforms' willingness to target it to users and, consequently, decrease the **Accessibility of Such Harmful Content**.[186]

With both approaches, the Map clarifies that policy proposals based on intermediary liability alone will only target the Quagmire of Content Moderation—a politically-fraught consequence of information pollution, rather than a root cause of it. It addresses the toxic waste reaching the shores rather than the factory producing it upstream; a worthy goal, but an insufficient one.

2. First Amendment

The First Amendment, of course, prohibits any restrictions on the freedom of speech by the government.[187] In the context of platforms, debates over the First Amendment tend to focus on whether people have a constitutional right for their speech to remain on platforms[188] or whether platforms have a constitutional right to decide what content to allow on their services.[189] Although particular interpretations of the First Amendment cannot be achieved via regulation, they could be achieved through strategic litigation. Two primary strands of First Amendment arguments are made in the context of debates over information pollution:

- ***First Amendment Protections for User Speech:*** Many argue that when platforms remove users' content from their platforms, platforms violate those users' First Amendment rights. While the merits of this view are debatable, if the Supreme Court adopted it, it would limit platforms' ability to reduce information pollution by decreasing the **Stringency of Content Moderation Practices**. The unique trait of this First Amendment-based argument is that if it

[186] This is likely to run into First Amendment issues. Daphne Keller, *Amplification and Its Discontents: Why Regulating the Reach of Online Content is Hard*, 1 J. of Free Speech L. 227 (2021). Policymakers must also be aware that this would simultaneously decrease the accessibility of non-harmful content. Eric Goldman, *The Complicated Story of FOSTA and Section 230*, 17 First Amend. L. Rev. 279 (2019).

[187] U.S. Const. amend. I.

[188] *See, e.g.*, Prager Univ. v. Google LLC, 2018 U.S. Dist. LEXIS 51000 (N.D. Cal. Mar. 26, 2018).

[189] *See, e.g.*, Christopher S. Yoo, *The First Amendment, Common Carriers, and Public Accommodations: Net Neutrality, Digital Platforms, and Privacy*, 1 J. OF FREE SPEECH L. 464, 501 (2021).

succeeds, the feedback loop within the Quagmire of Content Moderation is broken because the stringency would be constitutionally frozen at an absolute minimum and no level of public scrutiny could change it, absent a subsequent Supreme Court decision.

- ***First Amendment Protections for Platform Speech:*** Pressing in the opposite direction, however, is the argument that platforms have a First Amendment right to shape the editorial content of their platforms, including what content to carry, remove, amplify, or deprioritize. If the Supreme Court agreed with this view, platforms would retain total control over the **Stringency of Content Moderation Practices** and regulators would be prohibited from interfering with that stringency. Without complementary policies, it would permanently perpetuate the feedback loop and constitutionalize the Quagmire of Content Moderation.

Given the frequency of First Amendment arguments, and the apparent appetite of the Supreme Court to hear them,[190] the possibility of these outcomes and their implications should be recognized by policymakers.

B. Targeting New Vulnerabilities: Privacy Law

Although privacy law's scope extends far beyond information pollution, its focus on data implicates the **Emergent Role of Data** in the Map. Specifically, because the **Network Effects of Platforms** create incentives for platforms to increase their **Ability to Collect User Data**, which underpin their **Ability to Target Content to Specific Audiences**, which in turn drive their **Advertising Efficiency**, privacy regulation has powerful implications for addressing the new vulnerabilities to information pollution introduced by the **Emergent Role of Data.**

- ***Data Protection Requirements:*** Data protection law governs how entities that gather user data are allowed to use that data.[191] These protections could limit **Platforms' Ability to Target Content to Specific Audiences** by, for example, banning the use of targeted

[190] Amy Howe, *Justice request federal government's views on Texas and Florida social-media laws*, SCOTUSBLOG (Jan. 23, 2023), https://www.scotusblog.com/2023/01/justices-request-federal-governments-views-on-texas-and-florida-social-media-laws/.

[191] Michelle Greenlee, *What Is Data Protection and Why Does it Matter?*, SECURITY INTELLIGENCE (Oct. 8, 2021), https://securityintelligence.com/articles/what-is-data-protection/.

advertising[192] or imposing a fiduciary duty on data collectors.[193] Such efforts would restrict the conduct of platforms that currently exploit data at the expense of users or the public. As a result, the decreased accuracy of content recommendations would slow the proliferation of content on platforms, which would decrease the **Accessibility of Content**, including information pollution.

- ***Limits on Data Collection:*** Regulators could move further upstream and restrict platforms from collecting some data altogether.[194] Given that the **Ability to Collect User Data** is a prerequisite for **Platforms' Ability to Target Content to Specific Audiences**, limits on data collection would achieve similar outcomes as data protection requirements, while adding an additional layer of regulatory protection.

- ***Algorithmic Transparency Requirements:*** Algorithmic transparency requirements create an avenue for regulators to learn more about platform practices.[195] By requiring platforms to be more transparent about how their content-recommendation and moderation algorithms work, transparency requirements would not only provide more information to regulators, but would likely impose a degree of self-regulation on platforms. Consequently, they may also decrease the **Ability of Platforms to Target Content to Specific Audiences**.

As the Map shows, a side-effect of privacy-based interventions is that they ultimately undermine the **Advertising Efficiency of Platforms** by restricting the ability of data to power content recommendations. On the one hand, this may increase the **Competitiveness of Traditional News Publishers for Advertising Revenue**, which could strengthen some of our traditional defenses against information pollution.[196] At the same time, it would harm local businesses that rely on such targeting to reach a narrow slice of customers. Additionally, privacy-based interventions—particularly

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[192] Kelley Drye & Warren LLP et al., *Targeted Advertising in the Crosshairs: New Bill Seeks to Ban Many Forms of Targeted Advertising*, JD SUPRA (Jan. 21, 2022), https://www.jdsupra.com/legalnews/targeted-advertising-in-the-crosshairs-6078643/.

[193] *See* Jack M. Balkin, *The Fiduciary Model of Privacy*, 134 HAR. L. REV. F. 11 (2020).

[194] *See, e.g.*, 15 U.S.C. 91 § 6502.

[195] Tara Wright, *The Platform Transparency & Accountability Act: New Legislation Addresses Platform Data Secrecy*, STANFORD CYBER POL'Y CTR. SECURITY INTELLIGENCE (Dec. 9, 2021), https://cyber.fsi.stanford.edu/news/platform-transparency-and-accountability-act-new-legislation-addresses-platform-data-secrecy.

[196] *See* Parts II & III.

data protection requirements—impose significant regulatory costs, which may entrench incumbents.[197] As a result, such interventions may reinforce the **Consolidation of the Public Discourse into Fewer, Bigger Platforms**. Perhaps more than most interventions, privacy regulations targeting information pollution involve significant trade-offs.

C. Targeting the Rise of Platforms: Antitrust & Competition

Antitrust and competition law seeks to maintain fair competition in the marketplace.[198] With regard to platforms, it focuses on the competitive market for platforms and, consequently, seeks to intervene at the most upstream level of the map. Rather than target platform practices that directly implicate information pollution in the Quagmire, or even the upstream data collection that indirectly empowers such practices, antitrust and competition law address the foundational dynamics that created the platform-based public discourse's new vulnerabilities to information pollution: **Network Effects** and the **Consolidation of the Public Discourse into Fewer, Bigger Platforms**. A field of law currently in flux, two schools of thought offer distinct strategies for antitrust to address information pollution. Additionally, this part includes an additional intervention that targets market power through other means.

- ***Consumer Welfare Antitrust:*** The consumer welfare standard has been dominant in antitrust jurisprudence for the last half-century and requires that there be harm to consumers for a company's conduct to be actionable, whether or not a market is competitive.[199] Regulators who subscribe to this theory could set their sights on the market concentration of the advertising market, which is currently dominated by Facebook and Google.[200] Although an uphill battle, if successful, breaking up the companies would theoretically undermine the **Advertising Efficiency of Platforms** by loosening their grip on the advertising market. Consequently, breakup would

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[197] Alex Marthews & Catherine Tucker, *Privacy Policy and Competition*, BROOKINGS (2019), https://www.brookings.edu/wp-content/uploads/2019/12/ES-12.07.19-Marthews-Tucker.pdf.

[198] *Guide to Antitrust Laws*, FED. TRADE COMM'N, HTTPS://WWW.FTC.GOV/ADVICE-GUIDANCE/COMPETITION-GUIDANCE/GUIDE-ANTITRUST-LAWS.

[199] Noah J. Phillips, Commissioner of the Federal Trade Commission, *Competition and Consumer Protection in the 21st Century* 9, https://www.ftc.gov/system/files/documents/public_events/1415284/ftc_hearings_session_5_transcript_11-1-18.pdf; *see also* Lina Khan, *The New Brandeis Movement: America's Antimonopoly Debate*, 9 J. EUR. COMPETITION L. & PRAC. 131 (2018).

[200] PICKARD, *supra* note 41.

reverse the **Consolidation of the Market**, reducing platforms' **Ability to Collect User Data**. As a result, similar outcomes achieved by data collection regulations may be unlocked through antitrust. It bears mention, however, that this approach to antitrust ignores a root cause of **Advertising Efficiency of Platforms**: **Network Effects of Platforms** and the resulting incentives to collect and use user data. Those dynamics would remain unchanged and may over time lead the market to consolidate again around other companies, absent complementary regulations that target those underlying incentives, such as data collection restrictions.

- ***New Brandeisian Antitrust:*** A challenge to the consumer welfare standard of antitrust, spearheaded by FTC Chairman Lina Khan, is the New Brandeisian model of antitrust, which focuses on the non-economic effects of market power, rather than prices charged to consumers.[201] This approach would specifically target the **Consolidation of the Public Discourse into Fewer, Bigger Platforms** for the negative effects of a public discourse under the thumb of a few private corporations. If successful, remedies would break up platforms, achieving similar goals as a consumer welfare-based approach to antitrust, but relying on distinct legal arguments. Consequently, the New Brandeisian approach to antitrust would also have to involve complementary regulations that mitigate the effects of the **Network Effects** that gave rise to the industry consolidation in the first place.

- ***Interoperability:*** Although not part of antitrust law, Congress could similarly target the **Consolidation of the Public Discourse** by requiring platforms to be interoperable, which "allows competing technologies to speak to one another so that consumers can make a choice without being locked into any one technology."[202] Unlike antitrust, interoperability requirements directly target **Network Effects** "by letting small players piggyback on the infrastructure developed by big ones."[203] An effective interoperability requirement would eliminate **Network Effects,** shifting platforms' incentives

[201] Khan, *supra* note 199.

[202] Press Release, Office of Rep. Ken Buck (R-Colo.), *Ranking Member Buck Lays Out Bipartisan Solutions to Address Big Tech's Anticompetitive Behavior in Opening Statement*, https://buck.house.gov/media-center/press-releases/ranking-member-buck-lays-out-bipartisan-solutions-address-big-techs (see "Full prepared remarks").

[203] Bennett Cyphers & Cory Doctorow, *Privacy Without Monopoly: Data Protection and Interoperability*, ELEC. FRONTIER FOUND. (Feb. 12, 2021), https://www.eff.org/wp/interoperability-and-privacy.

away from **User Growth & Retention** and all the downstream incentives that arise from it.[204]

Although regulations based on addressing market power have the virtue of targeting the most upstream issues and root causes of information pollution, they also, for the same reason, carry the most risk of unintended consequences.

D. Targeting Weakened Defenses: Media Regulation

Each of the previous fields address platforms. Media regulation, however, sets its sights on news media and seeks to elevate the traditional defenses against information pollution that have declined in the shift to a platform-based public discourse. This section highlights two proposals:

- ***Fairness Doctrine-Style Regulation:*** From the 1950s into the 1980s, the Fairness Doctrine required public broadcasters "to cover issues of public importance and to do so in a fair manner."[205] Congress could attempt to similarly impose those regulations again.[206] By prohibiting one-sided news reporting, such a mandate would theoretically increase the **Proclivity of News Public Service Over Business Interests** for news organizations that otherwise incentivize catering to increasingly polarized audiences. Although such a mandate would likely only reach public broadcasters who rely on FCC licenses, rather than private cable news organizations, audiences of cable news stations remain significant.[207]

- ***Public Funding for News:*** A more direct approach would be government funding of the news. A recent proposal included government subsidies to individuals for purchasing the news.[208] A

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[204] *See also* Daphne Keller, *The Future of Platform Power: Making Middleware Work*, 32 J. DEMOCRACY 168 (2021).

[205] Kathleen Ann Ruane, *Fairness Doctrine: History and Constitutional Issues*, Cong. Rsch Serv. (July 13, 2011), https://sgp.fas.org/crs/misc/R40009.pdf.

[206] *Id*. (explaining that although the FCC deemed the Fairness Doctrine unconstitutional when it repealed the rule in 1987, its constitutionality remains "an open question").

[207] *See* Gavin Bridge, *Fading Ratings: A Special Report on TV's Shrinking Audiences*, VARIETY (Jan. 4, 2022), https://variety.com/vip-special-reports/fading-ratings-a-special-report-on-tvs-shrinking-audiences-1235142986/.

[208] *See generally* Marc Tracy, *Local News Outlets Could Reap $1.7 Billion in Build Back Better Aid*, N.Y. TIMES (Nov. 28, 2021), https://www.nytimes.com/2021/11/28/business/media/build-back-better-local-news.html (discussing a Congressional proposal to subsidize some news agencies).

> more aggressive effort might expand funding efforts like the Corporation for Public Broadcasting.[209] Although government funding is historically taboo among news organizations, it has received increasing support amid the collapse of the **Financial Viability of the Traditional Ad-Based Business Model for News**.[210] Public funding would increase **Non-Advertising Revenue** and, in proportion with the scale of the funding, increase the **Viability of the Local News Ecosystem** and the **Investment in the Quality & Reliability of Newsgathering**. Indirectly, such investments could diminish the **Nationalization of the Public Discourse** and increase the **Accessibility of News** and **Trust in News Publishers—**particularly at the local level.

On the one hand, efforts to increase the traditional defenses against information pollution could have a major effect. Because national news organizations disproportionately contribute to information pollution across social media platforms,[211] efforts to increase the quality of news production could mitigate their role in our epistemological crisis. On the other hand, traditional publishers no longer unilaterally set the agenda of the public discourse as they did in a publisher-based public discourse; thus, even successful efforts to restore their defenses will be insufficient without also addressing the New Vulnerabilities to information pollution and finding a way out of the Quagmire of Content Moderation.

CONCLUSION

Platforms are under the microscope. But the nature of the problem seems to mutate every time a different expert looks into the lens. The goal of this paper has been to provide a unifying framework for lawmakers, regulators and policy advocates seeking to improve our platform-based public discourse. By providing a systems Map that illustrates the way our public discourse has changed, this paper has aimed to show that the cornucopia of policy proposals are complementary, not competitive. Ideally,

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[209] CPB Financial Information, CORP. PUB. BROADCASTING, HTTPS://WWW.CPB.ORG/ABOUTCPB/FINANCIALS.

[210] *See generally* Penelope Muse Abernathy, *Business Model: A Bigger Role for Public Broadcasting*, THE EXPANDING NEWS DESERT, https://www.usnewsdeserts.com/reports/news-deserts-and-ghost-newspapers-will-local-news-survive/the-news-landscape-of-the-future-transformed-and-renewed/business-model-a-bigger-role-for-public-broadcasting/ (last visited Feb. 26, 2023) (discussing the decreasing financial viability of the ad-based business model for news companies).

[211] *See* YOCHAI BENKLER, ROBERT FARIS & HAL ROBERTS, NETWORK PROPAGANDA (2018) (describing "the propaganda pipeline" that leverages traditional news organizations).

by showing how those proposals correspond to distinct elements of the Map—different challenges in our platform-based public discourse—this paper can help guide debates about information pollution in the direction of productive outcomes.