

REGULATING INNOVATIVE PLATFORMS

AI-Based Online Monetization
Methods and Their Ramifications

Elizabeth Cassidy

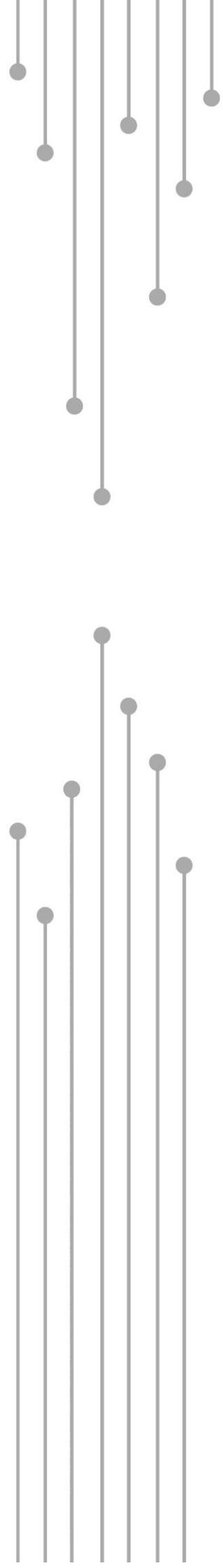


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About the Author

Ms. Elizabeth Cassidy is a Research Scholar at the Research Institute for European and American Studies (RIEAS) based in Athens, Greece. Recently, she accepted a position with Producer Entertainment Group in California, United States, where she will manage and assist some of the world's top LGBTQ+ talent. Ms. Cassidy graduated from Webster University in Missouri, USA, with a Bachelor of Arts in Business Management and Entrepreneurship Certification. While at Webster, she spent two years studying abroad in Athens, Greece (2019-2021). During her time in Athens, she volunteered as a Public Relations Ambassador at Archelon Sea Turtle Rescue Center and as a Junior Facility Organizer at Caritas Refugee Center. Ms. Cassidy aspires to work as a management consultant and ethicist. Her goal is to help companies transition to sustainable infrastructure and implement ethical policies. Currently, her interests are reflective of the failing regulatory systems within digital media. She hopes to inform the general public and incentivize regulatory pressure for digital privacy, safety, and ethical standards.

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Introduction

The convergence of technology, coupled with the innately social nature of humans, made digital media somewhat of an inevitability. The technology at our disposal is considered by many rudimentary in the context of its ultimate potential, thus indicating its capacity for advancement. Given the ubiquity of modern technologies, it is reasonable to invest in resources that make widely utilized technology more humane. The demand for ethical innovation in technology is expanding. Initially, digital technologists aspired to create unprecedented technology that reformed and refined society. In many ways, the industry has done so: reuniting family members, finding owners for abandoned animals, and platforming organizations that are short of resources. In recent years, however, the industry is consumed by a largely unregulated business model that profits off misinformation. The design teams on platforms like Google, Facebook, and YouTube have cultivated an online experience that exploits users' neurological vulnerabilities and prioritizes fiscal returns above nearly all other considerations. Utilizing artificial intelligence (AI), digital platforms surveil user data to manipulate on and offline behaviors. The irrefutable result is an extreme exacerbation of modern societal issues. Recognition of this monetized manipulation is growing; however, the business model remains revered for its indisputable economic successes. This fiscal incentive deters technologists from making the appropriate design modifications. Without external regulators, the integrity and autonomy of users are imperiled. Technologists are finally receiving a substantial level of culpability for their exploitative and permissive behaviors, but United States policy lags in advocating for privacy rights and regulations in

new media. To counter this trend, regulatory pressure for digital privacy, safety, and ethical standards must develop quickly. The absence of comprehensive digital privacy regulations exposes democracy to manipulation for profit.

Behind the Screen: The Business Model of Advertising

It is important to note that this early group of technologists in Silicon Valley did not foresee the existential societal issues that have since developed. The initial teams of developers were focused on improving the world through computer science and technology (McDavid, 2020). As iterations of these platforms developed, the goals shifted. The core of the modern business model relies on manipulating engagement and growth for profit.

Unlike other institutions with access to people's personal information, digital platforms have almost no restrictions or regulations on what they do with user data. This freedom allows any platform the ability to constantly mine and collect user data. Seemingly insignificant information excavated from the online behavior of users is used to inform what recommendations they get on their news feed, home page, search engine results, etc., as well as at what times or in what order they appear. By personalizing every person's online experience, technologists ensure high levels of engagement. This grants visibility for advertisers and subsequent payouts for the platform.

The platforms' relationship to, and regard for, their users are grossly misrepresented. The relationship between the platform and the user is secondary to the relationship between the platform and advertisers. Advertisers, instead of users, become the primary client of the platform. Advertisers pay for eyes on their content or campaigns. Cost per click (CPC) and cost per mile/per 1,000 impressions (CPM) are social media advertising metrics that refer to how much advertisers pay for engagement. Ultimately, these platforms are a business and need to make money to operate and contribute to society in meaningful ways. However, the current business model violates basic human privacy standards and subjects billions of users to unprecedented and undetectable incentivization mechanisms. The model directly exploits users by driving them into unregulated, often unreliable content through both psychological and technological exploitation.

Addiction Psychology

The technology industry has pioneered psychological manipulation for profit. The industry has leveraged what we know about the malleable neurological components of humans into its business model. Dopamine is the neurotransmitter responsible for reward-motivated behaviors and helps humans associate with positive reinforcements and incentives. Social media platforms are specifically designed to exploit this reward center in the human brain and make users crave likes, swipes, retweets, scrolling, refreshing, etc. These actions give users a boost of dopamine and a feeling of gratification that motivates similar behaviors. This

technology triggers the same neurological components in the brain as other addictions and stimulant drugs (Gadaleta, 2019). In some cases, a platform may implement a schedule that optimizes when and how users receive content. For example, Instagram may withhold likes on a post for a period of time in order to notify the user of a larger cluster later on. A user who was expecting likes to trickle in will feel an extra release of dopamine, or a sense of reward, when a surge of likes appears. This is not by accident; it is an intentional design component. “We don’t click randomly: many designs deliberately leverage our deepest vulnerabilities, promote compulsivity and behavior that compromise our autonomy and well-being” (Brain Science, Humane Tech). Instead of watching one YouTube video and moving on with their day, users are subject to a sophisticated recommendation algorithm that aggressively exploits these vulnerable parts of their brains. These addictive designs are means to relentlessly profit off of unsuspecting users. Chamath Palihapitiya, former Vice President of User Growth at Facebook, feels tremendous guilt about these addiction-based growth tactics. He believes that these dopamine-driven feedback loops are harming the fundamental elements of our society. Our brains are wired to favor social interactions, and they are being purposely exploited for monetary gain (Palihapitiya, 2019).

The more connected we are online, the more we feel socially successful and motivated to stay online. Using AI in this way, platforms are able to effortlessly generate tech addictions to fuel their monetization goals. Technologists have engineered these addictive behaviors into normalcy. Advertisers are willing to pay large amounts of money for digital campaigns because of the ongoing reliance on digital platforms. The odds of success and profit in this model are, to a large extent, psychologically guaranteed. Technologists have created a legal addiction-for-profit business model.

Engagement Tracking and Self-Optimizing AI

Key figures in Silicon Valley understand the persuasive and profitable powers of technology. Social media platforms abuse this boundless power to create an exhaustive digital profile for every user. Engagement tracking, often referred to as “surveillance capitalism”, is a mass-scale set of measurement algorithms that record everything each user does online (McDavid, 2020). This extensive surveillance catalyzes manipulation and privacy violations in the name of target advertising. Information about what we like, our purchases, mental and physical health, sexual orientation, location and political views, are collected, combined and used under the guise of targeted advertising. It is not just a user’s email address or residing city, it is information about who they are as human beings.

This information is carefully monitored and measured to create the perfect digital profile (“Rights, Privacy, Transparency Digital Era”). The more time a user spends online, the more sophisticated the resulting profile is, and the more easily they can be followed by engagement-tracking algorithms. This self-optimizing AI routes each user into the most profitable conglomeration of content based on their profile. The longer users spend on their

phones, the more they click, scroll and engage with a platform, the more accurate the algorithm's predictions become. This model relies on manipulative and discriminatory practices in order to promote misinformation and violate users' privacy ("Rights, Privacy, Transparency Digital Era"). Surveillance capitalism requires substantial amounts of data to make the predictions that keep users on the screen for longer, so as to engage with ads; but it all but guarantees a profit.

Cause for Concern: The Race for User Attention

Artificial intelligence and psychological manipulation are complementary in digital technology's race for human attention. Every platform competes for user attention and time. It is important to acknowledge that the methods digital platforms utilize to get users engaged with their platforms are not remotely similar or simply an evolved method of pre-existing practices. The professionally engineered, morally corrupt and sophisticated devotion to advertisers is unprecedented.

Anger is an overwhelming and sometimes uncontrollable emotion. Technologists see this as a vulnerability they can use to their advantage. "We're more likely to share, react, and comment on content that makes us angry. Companies like Facebook are fiscally incentivized to show users a timeline that elicits feelings of anger and outrage" (Harris, 2017). This is not innately corrupt; however, platforms "tilt public attention toward polarizing and often misleading content" (*Politics and Elections*) due to its engaging nature. This race for attention is injurious to society. QAnon conspiracy theories, anti-Semitic hate, oppressive reinforcements, propaganda and much more are being recommended to people online in the name of profit. According to the research of Massachusetts Institute of Technology professors Aral, Roy, and Vosoughi, fake news spreads six times faster than factual news (Vosoughi, Soroush, et al., 2018). This is due to the highly emotional content and unexpected information involved in fake news incentivizing shares and reposts (*Making Sense of the World*). Platforms like Facebook are aware that "64% of all extremist group joins are due to their recommendation tools" (*Making Sense of the World*), but are fiscally disincentivized to develop an alternative and thereby prioritize societal wellbeing. As it stands, these platforms are not accountable to their users. Their true function is to maximize user attention and engagement with content on their platform.

Personalized Truth

Users depend on digital platforms for information on elections, candidates, world events, as well as other activities. Informed by personalized engagement tracking, AI customizes a user's feed, explore page or Google search, by specifically targeting their demographic with information they are likely to agree and engage with. This manipulation steers users onto corresponding profiles, pages, channels, etc., of curated content that may or may not have verifiable information. The platforms give different definitions of words like democracy,

different information on climate change, and different interpretations of world events based on biased third parties (McDavid, 2020). This is an obvious threat to democracy. Users are more likely to create a consensus bias in these premeditated feeds, because so much of what they read, watch and consume refuels whatever false reality they have unintentionally created. This makes them unable “to reckon with or even consume information that contradicts with that world view” (McDavid, 2020). Essentially every user exists in an echo chamber of distorted information and news. Frustrations with family, friends and associates are inevitable when there is no agreed-upon meaning of truth. Moreover, solving communal or global issues is rendered much more difficult if there is no universally agreed-upon information to process.

Effect: The Existential Threats of Technology in Action

Modern societal issues are compounding technology’s involvement. Our autonomy as humans is compromised when technology plants distorted information in society as fact. Even those who do not engage with any digital platform, or who are educated on the many dysfunctions of technology, are subject to its prominent occupation of the public space. As users become more alienated, politically polarized, distractible, and distrusting because of technology, society as a whole suffers. In order to resolve the issues facilitated by technology, our attention, opinions, and understanding must be informed free of propaganda, dishonesty, fiction, or misleading content. Tristan Harris, president and co-founder of The Center for Humane Technology, believes that, if technology is going to occupy the public space of information and values, it is responsible for protecting that public space. “When they take over election advertising, they’re responsible for protecting elections. When they take over mental health of kids on Saturday morning, they’re responsible for protecting the integrity of Saturday morning” (McDavid, 2020). The current business model allows anyone who can pay for an advertisement, the ability to target a certain group of people with alleged information regarding anything from elections to “food for thought”. Perplexingly, the initial technologists did not anticipate these adverse effects of unprecedented, undetectable control over people’s thoughts and actions. The purpose of this design was to keep people online engaging with ads and making the platform money. Instead, this design has polarized communities and exacerbated existing societal issues.

Political Polarization

Polarization is hardly an exclusive feature of American politics. Tensions over Brexit in Britain, the *coup d’état* in Myanmar, and countries with insufficient leadership during the pandemic, feel the intensity of these issues exacerbated by partisan media. Social media’s presence in America’s uniquely stubborn two-party electoral system further-aggravates legitimate public and political discourse (Dimock and Wike 2020). “The competition becomes cutthroat, and politics begins to feel zero-sum, where one side’s gain is inherently the other’s loss” (Dimock and Wike 2020). The January 6, 2021, attack on the United States Capitol

complex is an exact realization of technology's unchecked power in society. Supporters of President Donald Trump attempted to overturn the election results and vindicate his baseless claims of a stolen election. Informed by conspiratorial and extremist content online, the insurrectionists on January 6 vandalized the Capitol grounds, assaulted Capitol Police and attempted to capture and harm lawmakers. Each of these domestic terrorists was deemed likely to agree with, or was persuadable, by the AI that fueled their content recommendations. In 2019, "[a]nalyzing over two million recommendations and seventy-two million comments on YouTube [...], researchers demonstrated that viewers consistently moved from watching moderate to watching extremist videos; simulation experiments run on YouTube revealed that its recommendation system steers viewers towards politically extreme content" (Ribeiro et al., 2020). The rate with which misinformation is spread indicates that, until legislative regulations are in effect, every user must be alert and aware of potential biases engaged with online. Additionally, political campaigns are able to target specific users with curated advertisements. The ads will show a user one topic or issue that they are likely to agree with and omit anything contradictory. These advertising tactics can also be used to discourage voters of certain demographics from voting in the first place. Not only do these strategies compromise democracy, but they also marginalize already underrepresented groups from voicing their political concerns. Voter suppression has been modernized thanks to digital platforms.

Fueling Inequity

The biases of the predominantly homogeneous AI community do, in fact, make their way into the technology they create. Majoritively white and male technologists are designing what millions of people see and think about each day. This lack of diversity results in harmful biases making their way through Google's search engine, neural network and face recognition software (Metz, 2021). When tested, Google search's Natural Language Processing (NLP) or "fill-in-the-blank" suggestions regularly associated the word "African" with the word "poor" (Reddy et al., 2020). Technological biases actively sustain and often amplify racism. Roughly a quarter of 14-22-year olds report that they "often" encounter racism online (Rideout et al., 2021). This percentage has "nearly doubled in the past two years (from 12% to 23%)" (Rideout et al., 2021). Platforms are actively aware of these oppressive shortcomings, but are unwilling to seriously consider the implications or invest in meaningful change. A whistleblower from Facebook revealed that the company's projection of competence is a farce and that many of the company's actions are haphazard (Silverman et al., 2021). Without proper resources, the company is reduced to prioritizing "global activity that posed public relations risks, as opposed to electoral or civic harm" (Silverman et al., 2021). Facebook is arguably the platform that most accurately exemplifies the need for external regulators. Without a comprehensive regulatory structure, platforms will continue to act only in their best interest, without considering the implications for underrepresented groups.

Climate Change and COVID-19

In the past decade, communities have had to cope with compounding global catastrophes. Within that context, establishing accurate and verifiable information is more paramount than ever. The climate emergency and COVID-19 pandemic require a unified acceptance of factual information. Without a shared understanding of the truth, we cannot effectively resolve these global issues. The current unregulated monetization methods allow ultra-alienated subsections of communities to present and consume misinformation as fact. Facebook's anti-misinformation tactics appear sedated as it can take "up to 22 days for the platform to downgrade and issue warning labels on false content" (Legon and Alsalman, 2020). This belated response is ineffectual when considering the millions of views, interactions, shares and overarching spread of misinformation that occurs before it is dealt with by Facebook. Additionally, users who do not speak English are disproportionately exposed to misinformation with 51% of non-English misinformation content existing free of warning labels (Legon and Alsalman, 2020). Concerning the climate crisis, misinformation spreads similarly and rapidly. Thankfully, many studies show how AI can be a predominant force in solving the climate crisis. Entire models of green infrastructure, sustainable computing, etc., are at our disposal, contingent upon the necessary support. If informed external regulators governed digital technology, our society would afford a great deal in terms of both misinformation suppression and the mobilization of AI's invaluable potential.

Regulations

Technologists continue to frame the issues surrounding digital technology and AI as intricacies that they are equipped to solve. The reality is that digital platforms are unwilling or unable to effectively manage user data and keep up with the rate of misinformation being spread. Furthermore, platforms profit from content being shared, even if it degrades democracy, harms children, perpetuates the disenfranchisement of minorities, etc. Even as companies like Facebook publish evaluations and updates of their security protocols and data practices, the company's chief executive officer (CEO) and founder Mark Zuckerberg defies any meaningful data accountability. Public and political pressure mounted after Facebook allowed voter-profiling firm, Cambridge Analytica, to harvest the data of over 50 million users. Colleagues of Zuckerberg, including Apple CEO Tim Cook, recommended that Facebook delete superfluous data about its users' off-site behaviors (Isaac and Nicas, 2021). Zuckerberg rejected this solution as Facebook is essentially powerless in any attempt to reform due to the business model's reliance on data mining. As it stands, any significant data regulations would immobilize the entire business. To properly regulate digital technology, policymakers and representatives cannot have the vested interest that a CEO, founder, investor or employee may have. Unbiased regulation is paramount in the accountability of digital platforms.

Advancements

A unified resistance of user exploitation would signal a prioritization of human rights, consumer rights, and equal opportunity for advertisers that would no longer need to share revenue with data brokers (“Rights, Privacy, Transparency Digital Era”). Sanctions on digital technology must be radically different from those on traditional media. Limited bandwidth and editorial oversight in traditional media disincentivize polarizing content. Contrastingly, digital media relies on leveraging and exploiting users’ data for profit, therefore, it is essential for the sanctions on media to update to the digital age. Right now, each platform gets to decide how to deal with misinformation and harmful content. Many opt to manually de-platform users who produce misinformation that has spread and caused public interest, outrage, etc. (Ghosh, 2021). Ultimately the policy standard comes down to a prioritization of prevention. If the standard or norm becomes working retroactively after inhumane viral events or misinformation campaigns, technology is not being utilized to its full potential. This is not a problem that technologists are equipped to solve on their own, and we must stop allowing them to frame it as such. Policymakers and elected officials cannot treat this as a partisan issue or focus on a single actor. They must address the root causes and reform in iterations. Technologists will be important allies in effective restructuring, but government support is crucial in achieving unbiased, comprehensive reform. (Ghosh, 2021).

The administration of United States President Joseph Biden is purporting a firm reign on the abhorrent role that technology has played in dividing the nation. The Biden administration wants to engage the government as an active partner in setting an innovative national technology agenda, as well as a regulator of digital platforms (Atkinson *et al.*, 2020). Additionally, limiting Section 230 of the Communications Decency Act protections is a cornerstone of Biden’s technology reform. Section 230 essentially protects platforms from libel on user-generated content. The reform may include a push from Congress for digital platforms to meet data transparency, protection and privacy standards to qualify for protection under Section 230. Technology firms should be accountable to the public interest and perhaps even be charged on their externalities or taxed on the volume of data they collect. The projections from the Biden administration’s agenda on technology are fundamental in accomplishing long-overdue reform in the industry.

Conclusion

In 1964, the term “global village” was coined by media theorist Marshall McLuhan to describe technology’s ability to interrelate every human experience. In terms of modern digital technology, McLuhan effectively predicted the simultaneous expansion and reduction of culture and community. While technology allows instantaneous international discourse, it also may reduce positive cultural boundaries. Our species is now widely reliant on digital technology. Without regulatory infrastructure, every subsection of culture is exposed to manipulation and degradation for profit. Operation reforms must prioritize transparency,

address root causes and accept that reform will be an ongoing process. Without all-encompassing regulations, digital platforms will continue to profit from spreading misinformation and causing societal harms. The persistence of limitless immoral business practices in the technology industry must diverge and require the materialization of ethical restructuring. Digital technology has reformed sociological structure *en masse*.

References

- Atkinson, Robert, et al. *President-Elect Biden's Agenda on Technology and Innovation Policy*. ITIF, Nov. 2020, www2.itif.org/2020-biden-tech-innovation-policy.pdf.
- "Brain Science." *Brain Science*. Center for Humane Technology. Web. 22 Mar. 2021.
- "CDD History: Center for Digital Democracy." *Promoting Consumer Rights, Protecting Privacy, Ensuring Transparency, and Empowering the Public in the Digital Era* | Center for Digital Democracy, www.democraticmedia.org/history.
- Dimock, Michael, and Richard Wike. "America Is Exceptional in the Nature of Its Political Divide." *Pew Research Center*, 13 Nov. 2020, www.pewresearch.org/fact-tank/2020/11/13/america-is-exceptional-in-the-nature-of-its-political-divide/.
- Gadaleta, Francesco. "The dark side of AI: social media and the optimization of addiction." Data Science at Home, Interviewee Chamath Palihapitiya, December 3, 2019, <https://datascienceathome.com/the-dark-side-of-ai-social-media-and-the-optimization-of-addiction/>
- Ghosh, Dipayan. "Are We Entering a New Era of Social Media Regulation?" *Harvard Business Review*, 14 Jan. 2021, <https://hbr.org/2021/01/are-we-entering-a-new-era-of-social-media-regulation>.
- "How a Handful of Tech Companies Control Billions of Minds Every Day | Tristan Harris." Performance by Tristan Harris, *YouTube*, TED, 28 July 2017, www.youtube.com/watch?v=C74amJRp730&list=WL.
- Isaac, Mike, and Jack Niclas. "Breaking Point: How Mark Zuckerberg and Tim Cook Became Foes." *The New York Times*, 26 Apr. 2021, www.nytimes.com/2021/04/26/technology/mark-zuckerberg-tim-cook-facebook-apple.html.
- Legon, Andrew, and Ahmed Alsalman. "How Facebook Can Flatten the Curve of the Coronavirus Infodemic." *Avaaz*, 15 Apr. 2020, secure.avaaz.org/campaign/en/facebook_coronavirus_misinformation/.
- "Making Sense of the World." *Ledger of Harms*, ledger.humanetech.com/.
- McDavid, Jodi (2020) "The Social Dilemma," *Journal of Religion & Film*: Vol. 24: Iss. 1, Article 22.
- Metz, Cade. "Who Is Making Sure the AI Machines Aren't Racist?" *The New York Times*, 15 Mar. 2021, www.nytimes.com/2021/03/15/technology/artificial-intelligence-google-bias.html.
- Nadeem, Moin, Anna Bethke, and Siva Reddy. "Stereoset: Measuring stereotypical bias in pretrained language models." *arXiv preprint arXiv:2004.09456* (2020).
- "Politics and Elections." *Ledger of Harms*, ledger.humanetech.com/.
- Ribeiro, Manoel Horta, et al. "Auditing Radicalization Pathways on YouTube." Auditing Radicalization Pathways on YouTube, Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency, 1 Jan. 2020, dl.acm.org/doi/abs/10.1145/3351095.3372879.
- Victoria Rideout, Susannah Fox, Alanna Peebles and Michael B. Robb. "Coping with COVID-19: How young people use digital media to manage their mental health." *Common Sense Media*. (2021).

Silverman, Craig, et al. "I Have Blood On My Hands': A Whistleblower Says Facebook Ignored Global Political Manipulation." *BuzzFeed News*, BuzzFeed News, 22 May 2021, [buzzfeednews.com/_article/craigsilverman/facebook-ignore-political-manipulation-whistleblower-memo](https://www.buzzfeednews.com/article/craigsilverman/facebook-ignore-political-manipulation-whistleblower-memo).

Vosoughi, Soroush, et al. "The Spread of True and False News Online." *Science*, American Association for the Advancement of Science, 9 Mar. 2018, [science.sciencemag.org/content/359/6380/1146.full](https://www.science.org/doi/full/10.1126/science.1257583).

Abstract

Digital media has utilized advancements in persuasive technology and artificial intelligence to monetize manipulation. Technology's capabilities have evolved far beyond the preceding sanctions and require external regulators to ethically occupy the public space. The lack of regulations in digital media exposes user autonomy and democracy to manipulation and exploitation for profit. The ramifications of unchecked digital media are exemplified by the rise in political polarization, amplification of misinformation and modernization of systematic inequity. Private studies, peer-reviewed articles and leading technologists recognize that modern societal issues compound with technology's involvement. Digital platforms allow and propel misinformation, opinion and conspiratorial trends into public cognition. Currently, digital media has no formal responsibility to protect the public space of information. Elections, world events, personal self-image, etc., are all altered in the pursuit of profit. Without external regulators, digital media platforms have no incentive to make ethical design modifications. Social media will continue to mine user attention, potentially at a larger societal cost than ever before.