

Profiled and Targeted: The Data Economy Behind Social Media Algorithms

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Abstract:

Social media's rapid growth over the last decade has enabled tech giants like Google, Meta (Facebook), and TikTok to collect a massive amount of user data, driving their collective market capitalization into the trillions of dollars. These companies monetize their “free” platforms through highly targeted advertising, powered by algorithms that analyze user data to create detailed consumer profiles. While this innovation allows advertisers, especially small businesses, to efficiently reach their ideal audiences, it raises ethical concerns about privacy, data collection practices, and the virtually unchecked power of these corporations. Research shows a lack of stringent regulations in the U.S., enabling these companies to operate with limited oversight, posing potential risks to citizen privacy and autonomy. As individualized marketing continues to grow, it is essential to understand how it works, the benefits, and drawbacks to ensure responsible and fair use of this revolutionary technology.

I. Introduction:

The ubiquity of social media has grown dramatically over the past decade, driving the market capitalization of large tech corporations, such as Alphabet Inc. (Google’s parent company), to exceed two trillion dollars (Yahoo, n.d.). Despite consumers not paying directly to use these platforms, the companies monetize through selling targeted advertising. To effectively target ads, giants like Google, Meta (Facebook), and TikTok use their platforms to collect vast amounts of user data and have algorithms interpret it for precise profiling based on interests. Traditional advertising methods, which relied on rough estimates and guessing, have been transformed by the internet and its ability to give endless data points on users. This revolution allows advertisers to target anyone with any combination of interests. Leveraging the attention garnered by free social media platforms, these companies can sell targeted attention to advertisers. The model is highly efficient for advertisers and cuts down on advertising waste

which can significantly help small businesses with tight budgets. These business practices do have significant downsides, none of which fall on the companies themselves. In the United States, there are very few laws that regulate what can be collected and how it can be used. This has led to the unchecked, rapid expansion of social media companies, allowing them to harvest the data of millions of Americans. Acquiring this much information gives these companies a lot of power which could be abused due to lack of oversight or regulation.

The future of marketing is individualized. This type of marketing is only going to grow, so it is crucial that we understand how it works, the pros and cons, and the power that it brings to businesses. From a small businesses' perspective, you can efficiently use your advertising budget to target your exact ideal customer base. This makes online targeted advertising a no-brainer essential for a small business. In America, there are 33.2 million small businesses and there are only four big tech companies that offer targeted advertising at scale. (The State, 2023). Therefore, it can be inferred that these companies are some of the most profitable in the world, especially due to the fact that these companies are not even the ones creating the content for their platforms, users are, so there is no content production cost. Targeted advertising is only going to become more ubiquitous and more powerful, so it is crucial that there is a conversation about how and when it can be used. But until that discussion happens, these companies will continue to dominate the advertising market. Using predictive algorithms to keep people engaged, social media conglomerates collect vast amounts of data to create profiles of their consumers to make targeted advertising more effective, making billions of dollars in the process.

II. Literature Review:

There are many different perspectives that social media advertising and algorithms can be seen from. There is the perspective of small businesses who use the tools, social media marketing agencies who sell assistance regarding the tools, and even government agencies that regulate business activities. All of these perspectives are captured in the sources that were reviewed for the construction of this paper.

There is an entire industry of social media marketing agencies that promote the use of targeted marketing tools built into platforms like Facebook and Instagram. These agencies emphasize the ability to reach highly specific audiences while avoiding wasted ad spend on uninterested users. For small businesses, this precision is especially important—it allows them to stretch limited advertising budgets and directly target their ideal customer base. As the authors of a 2024 review note, “big data analytics significantly enhances the ability of marketers to understand and predict consumer behavior, leading to more effective targeting and segmentation strategies” (Okorie et al., 2024, p. 216). From a marketer’s perspective, the biggest challenge of their job has always been avoiding irrelevant audiences and finding your target audience to maximize the efficiency of their spend. Social media marketing directly solves this issue by using engagement metrics, predictive modeling, and personalized ad delivery to get marketers their target audience and avoid people who are uninterested. The effectiveness of this method means that targeted advertising through social media is no longer optional for companies—it’s a necessity. Hence the explosive revenue growth of companies like Meta and Google, whose platforms now serve as the backbone of digital advertising worldwide.

By examining a comprehensive report from the Federal Trade Commission (FTC), it is evident that the extensive data points collected about consumers lead to some serious ethical and legal questions. The large tech companies are very reluctant to share the methods they use to

collect data and the data points that are attributed to individuals during collection. However, the FTC was able to prove the massive profits that were being collected from these companies. They also reported that they struggled to get replies when reaching out to tech companies inquiring about their strategies for consumer safety. On the same note, data collection of children was a concern shared by researchers at the FTC, and although the companies claim that they do not target advertising to children, there is soft evidence to the contrary (Federal Trade Commission, 2024, pp. 45-47). This inference suggests that the profit-driven state of these companies crosses ethical and sometimes legal lines to collect the most amount of information possible to acquire the most accurate consumer profiles for maximum revenue.

One of the clearest illustrations of the financial power behind algorithm-driven advertising is Facebook's revenue model. According to Katsikas and Murugan (2021), "Facebook made 69.5 times more per user than Yubo," a competing social platform that does not engage in personal data collection or targeted advertising. This notable contrast in revenue per user exposes the true value of user data and the predictive algorithms that leverage it. Facebook's algorithms do not just serve content—they predict behavior, enabling advertisers to hit narrowly defined targets with minimal waste. The study underscores how surveillance capitalism is not theoretical; it is the bedrock of social media profitability. As privacy legislation looms, understanding this profitability gap is critical to evaluating what is really at stake: the privacy of users, or the profitability of billion-dollar corporations. Overall, this study is a perfect way to demonstrate that the true value in large social media companies is the data they collect about users, not the service they provide to them.

In addition to the previous reports, sections of United States law were also reviewed for this paper. Enacted in 1996, Section 230 on the Communications Act (added as part of the Communications Decency Act of 1996) was a provision created with the purpose of "provid[ing]

limited federal immunity to providers and users of interactive computer services” (“Section 230: An Overview,” 2025, para. 1). At the time it was enacted in 1996, the previous quote was originally created for the purpose of ensuring that telecom companies were not held responsible if criminals used their cell phone services for crimes. Although not updated, the act is now applied to social media companies, mostly relieving them from any legal responsibility for the content that is posted on their platforms, should it cause any harm. Section 230 of the Communications Act continues to be the court's reasoning for dismissing cases that call into question a media company's decision to allow a certain type of content on their services. This section of law has been a significant barrier to holding social media companies accountable for the immense power they have over the population's information and influence over behavior.

III. Research Methodology:

This paper employs a qualitative literature synthesis of peer-reviewed academic sources and industry reports to examine the predictive algorithms that assist in delivering personalized content and advertisements. A mix of four scientific and scholarly journals were used. Sources were selected based on relevance to three core themes: algorithm functionality, data collection strategies, and monetization outcomes (profitability). Sources were located using advanced Google searches using keywords such as “predictive algorithm advertising,” “social media data collection,” and “personalized marketing big data.” Each source was reviewed for credibility, publication quality, and inclusion of technical or economic insights into algorithmic advertising models.

To complement the literature synthesis and look at the effects of targeted social advertising from a larger business perspective, an interview (January 7th, 2025) was conducted with Jessica Lang, a member of the research team at Prof G Media, a company that frequently

produces podcasts that contain information about business as well as big tech and its impacts on markets. The meeting was conducted through Zoom video chat, and Ms. Lang was asked questions that were focused on the strategic and economic impact of targeted social media advertising, particularly for small businesses. Topics explored included the trade-off between accessibility and market competition, the potential diminishing returns of ad saturation, and the evolving definitions of success in ad campaigns—from raw conversions to long-term customer ecosystem engagement. The discussion also covered the influence of simplified ad interfaces, the effectiveness of various performance metrics (e.g., click-through rates, engagement, conversions), and whether these tools truly empower small businesses or primarily benefit the dominant platforms in big tech. The interview concluded with the following question: Who is losing in this new age of targeted social media ads? To that, Ms. Lang replied, "Linear television, no question. I think those who advertise on linear television, cable, linear programming, and anything other than sports, are really losing out." Her reasons were that it is not adaptable to each consumer and it's much more expensive and less cost-efficient. The previous quote proves the point that the future of marketing is individualized because it is more efficient and effective in finding an advertiser's desired audience. For this reason, companies that use linear television are not going to be as competitive in the marketplace because they do not employ any of the strategies such as accurate consumer profiling, predictive algorithms, or targeted advertising. The most important insight from the interview was that you can no longer be competitive as a business if you do not employ individualized marketing strategies. Google, Meta, and other social media platforms provide a service that everyone needs, so unsurprisingly, these companies are very successful because they have such a large customer base.

These methods were specifically selected to answer the research question: How do social media algorithms maximize user engagement to collect customer-specific data and create

accurate consumer profiles, in an effort to deliver individualized marketing? The literature synthesis examined the technical aspects of how algorithms use machine learning to curate the best content to keep a user engaged on that platform while collecting data on that user. This provided insight into how the algorithms perform the first few steps of the business model: collecting data and then keeping the user engaged for as long as possible to collect the most amount of data. The FTC report also provided insight into the types of data that were collected, as well as how the companies are entering legal and ethical grey areas. The report also broke down the business model into its core components. Lastly, the conducted interview offered a business and societal perspective on targeted social media advertising. Although not directly related to the research question itself, the implications that this type of advertising has on our economy is profound and necessary to understanding the topic as a whole.

Results & Findings:

One of the key ways that social media algorithms maximize user engagement is through a highly structured algorithmic ranking system. This system is a set of computer programs with the directive of predicting and influencing user behavior in real time. According to Meta ("How Facebook," n.d.), their ranking algorithm in their feed operates in four stages: Inventory (assessing what has been posted by people you already follow, to prioritize content you are most likely to want first), signals (algorithm interprets hundreds of thousands of data markers about the video such as time of post, internet connection of the viewers device, etc.), predictions (algorithms uses signals combined with existing user data to predict the following: if you'll like a story, how long you'll watch, and if you'll find it informative), and score (the algorithm then gives the content a score to predict how well it will do with other people and ranks it in the news feed accordingly, with the best and most relevant content being shown at the

top). This doesn't just keep users engaged, it keeps them in a loop of attention. The more a user interacts with content, the more accurately the algorithm can profile them, and the more tailored—and more profitable—their content feed becomes. This is because, embedded between every few videos, lies an advertisement, and the more accurate the user profile, the more expensive the ad impression. In turn, this drives profits and is central to how platforms like Facebook and Instagram build detailed consumer profiles to support precise targeted advertising.

Behind the Facebook ranking technology, there is a constant, ongoing process of creating a “profile” of a user. Information is collected in a never-ending loop that effectively creates a “digital twin,” allowing advertisers direct insight into all the metrics that they find useful for advertising. This type of data collection is broadly referred to in marketing as a consumer profile and is essential for effective targeted advertising. In one report, the authors observed that “Some companies reported collecting or inferring other forms of demographic information, including information regarding their SMVSS [(Social Media Video Streaming Service)] user’s household, such as education, income, marital status, and parental status” (Federal Trade Commission, 2024, p. 17). All of these traits are stored by the company and attached to your account. As stated above, the information stored in a user’s profile is not all explicitly stated; using information inferred from the signals and behavior of the user, the machine makes conclusions of its own. These analytics, as shown in the literature, “significantly enhance” marketers' ability to predict behavior (Okorie et al., 2024, p. 216).

The astronomical success of these companies, mainly driven by a large demand for targeted advertising, has had a ripple effect on our entire marketplace. The data collected by these companies is incredibly valuable to advertisers. The data’s value is most evident when comparing social media platforms that collect vast amounts of data with those that do not. Katsikas and Murugan (2021) found that “Facebook made 69.5 times more per user than Yubo,”

a privacy-focused platform that does not track its users. This gap in revenue per user illustrates that the value of these companies lies not in their platform, but in the sellable data that their platform collects. That data is then used to sell targeted advertising slots to advertisers.

Companies like Meta entirely rely on this as their primary source of revenue because users pay nothing to use the service. Advertisers are willing to pay significantly more for ad placements when they know exactly who will see them and how likely that person is to engage or convert (click on an ad resulting in a sale). This assists in using an advertising budget effectively. This model is especially critical for small businesses (most of which have tight advertising budgets), a point emphasized by Jessica Lang of Prof G Media in an interview, who stated that businesses that fail to adopt individualized marketing strategies are not going to be as competitive against those that do use them. In other words, individualized ad targeting isn't just more profitable—it's become a requirement for survival in the modern marketplace. In this model, data is currency, and the constant high demand for targeted advertising ensures consistent customers, resulting in a lot of revenue.

Despite all the revenue, influence, and wide user base, finding specific information about how these algorithms work is quite a challenge. Social media companies, such as Meta, are very reluctant to show the public how their platforms work and what data they truly collect. In the reports that do exist from the companies themselves, they use broad language, such as "demographic information," to describe the data that they collect. However, this is not just a problem for consumers. The Federal Trade Commission (FTC) also experienced this problem when conducting a technical report about social media video streaming service data collection practices. Not only are the data practices hard to understand, the companies most often decline to comment or refuse to explain their data collection processes. From the perspective of just a normal user, "[they] observed only one company that allowed users to download data to

see how they had been categorized for ad targeting purposes” (Federal Trade Commission, 2024, p. 43). This practice of allowing the algorithms to run without oversight poses legal and ethical questions about manipulation, targeting minors, and lack of user agency. However, social media companies are protected by Section 230 of the Communications Act of 1934. The section relieves tech companies of any legal responsibility for how their algorithms are used, even if it causes measurable harm, such as spreading fake news. Without updated regulation, these companies continue to grow their power and influence over all spheres of our society. There has been a lack of accountability from these companies that has allowed algorithms to scale with little to no human oversight, which raises urgent questions about consumer safety, user autonomy, and democratic vulnerability.

Despite extensive research and valuable insights, the research conducted in this paper has limitations regarding the information collected for its creation. Social media can be very abstract and difficult to study in a controlled manner because everyone’s social media application behaves differently as a result of the interactions that a specific user had with the app. For this reason, no technical testing was conducted for this research paper, a limitation that decreases the objectivity of the claims. All cited resources use publicly available data, not official industry reports. As mentioned, verifiable sources on the exact algorithmic processes and documentation from the companies themselves are incredibly difficult, if not impossible, to find. In addition, algorithms and the internet as a whole evolve at a rapid pace. For this reason, the research conducted here could become outdated in a few years. Lastly, this paper looks only at the economic and business implications of companies that offer targeted advertising. As a result, there is a lack of information about the psychological effects that these platforms have on users in this paper.

IV. Conclusion:

Using a multifaceted approach, social media giants have engineered platforms that serve one primary goal: maximizing profit through hyper-targeted advertising. To achieve this, they collect an immense volume of personal data—ranging from more obvious behaviors like likes and comments to more subtle cues such as time spent on posts and search history. This data feeds predictive algorithms that build detailed consumer profiles, enabling advertisers to target users with uncanny precision. As a result, user attention and data becomes a commodity, auctioned off in real time to the highest bidder. The answer to the research question is clear: by leveraging predictive engagement algorithms, social media companies create a feedback loop of surveillance and personalization that not only drives profitability but also raises ethical concerns about privacy, manipulation, and the growing disconnect between user awareness and algorithmic power. Therefore, marketers and tech giants have a responsibility to balance profits with the ethics of using near-omniscient algorithmic systems for hyper individualized marketing.