Consumer Awareness in the Digital Age[1]

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Abstract

Consumers increasingly rely on digital platforms in their daily lives, raising concerns about whether firms present information in ways that enable informed consumer choices. Drawing on recent FTC and DOJ enforcement actions, this article examines three areas where consumer understanding may break down: manipulative design patterns, the ability to identify organic content, and pricing transparency. It also reviews the legal tools available to enforcers and highlights the increasing importance of internal platform data in identifying potential violations.

I. Introduction

Consumers increasingly depend on digital platforms in nearly every aspect of daily life. They use search engines and AI assistants to obtain information, make purchases through e-commerce websites, and communicate with friends, family, and broader social networks via digital channels. Mobile apps have become essential tools through which consumers engage with the world.

This increasing reliance on digital platforms has raised concerns over how well consumers understand the terms of the transactions they make online, and whether digital platforms provide consumers with the information they need to make informed decisions. In the US, the Federal Trade Commission (FTC) bears primary responsibility for addressing these issues through its mandate to prevent unfair or deceptive practices and unfair methods of competition. That is, the agency's role is to ensure that a business operates "in the rules of the game, which is to say, engages in open and free competition, without deception or fraud."[2]

In this article, I first examine challenges to consumer understanding in digital markets by drawing on recent antitrust and consumer protection cases. I focus on manipulative design patterns in the context of online subscriptions, the ability to distinguish advertising from organic content, and on consumer knowledge of the (implicit) price charged online. I then discuss the primary legal tools available to authorities to remedy problems, and the types of evidence created by digital platforms that authorities can use to evaluate problems.

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[2]This quote is from Milton Friedman's famous essay on the social responsibility of business: "The Social Responsibility of Business Is to Increase Its Profits" in the New York Times magazine in 1970.

II. Consumer Understanding in Digital Markets

A. Manipulative Design Patterns

A major concern in online markets is firms' potential use of manipulative interface designs that lead consumers to make decisions they would not otherwise make and might cause them harm (Federal Trade Commission (2022)). I discuss this issue in the context of online subscriptions. Such subscriptions raise two main risks to consumers: they may not be aware that they have enrolled in a subscription, and firms may make it difficult for them to cancel their subscription.

One common manifestation of these risks is the growing use of 'negative option' subscription models, where consumers are automatically charged unless they affirmatively cancel. Today, consumers routinely subscribe to software, mobile applications, and premium services such as expedited shipping or exclusive discounts offered by e-commerce platforms.

A prominent example of consumer harm stemming from negative-option subscriptions is the FTC's lawsuit against Amazon over its Prime subscription service.[3] Amazon would present consumers shopping on Amazon with an upsell to join Prime in several ways, including an interstitial upsell that consumers had to view when trying to purchase a product before reaching the check-out page. Figure 1 below provides an example.

An internal Amazon document identifies several ways in which the upsell shown in Figure 1 may mislead consumers (all quotes below are from the document). First, the yellow enrollment button "does not make it clear that consumers are signing up for Prime." Second, the option to decline enrollment—presented in blue text on the left—"is not clear/prominent so customers miss it" and inadvertently enroll. Third, Prime branding is not prominent on the upsell interface so "customers did not realize this was a Prime upsell." Finally, the price of Prime and the negative-option auto-renewal "was not prominent so customers did not realize the associated cost."

Figure 1: Universal Prime Decision Page (Desktop, May 2018)[4]

[3] The FTC's complaint in the Amazon case is available at: https://www.ftc.gov/system/files/ftc_gov/pdf/2023-09-20-067-AmendedComplaint%28redacted%29.pdf. Amazon Prime provides discounts on fast shipping (for example, free 2 day shipping on eligible items) as well as access to a major video streaming service. Amazon Prime costs $139 per year ($14.99 per month); Amazon receives $25 billion in Prime subscription fees a year.

[4] See Appendix A of the FTC's complaint, available here: https://storage.courtlistener.com/recap/gov.uscourts.wawd.323520/gov.uscourts.wawd.323520.67.1.pdf.

The FTC also alleged that consumers found it difficult to cancel their Prime subscription. Consumers had to navigate a four-page, six-click, fifteen-option cancellation flow internally named the "Iliad", compared to only one or two clicks for enrollment.

Amazon employees repeatedly described their practices as manipulative. The CEO of Amazon's retail business wrote in an internal email that "subscription driving is a bit of a shady business" and referred to Amazon CEO Jeff Bezos as the "chief dark arts officer".[5] Another internal document refers to worries of scrutiny from "consumer watchdogs [who] say the manipulative dark pattern design makes it hard for people to end membership."

The FTC's case against Uber concerning its Uber One subscription service raised similar concerns, as the FTC alleged that Uber enrolled consumers without their consent and made it difficult for them to cancel.[6] Despite advertising that consumers could "cancel anytime without fees and penalties," Uber restricted online cancellations within 48 hours of the end of a membership period and, at times, obscured access to the cancellation flow altogether.

Even when cancellation was technically possible, consumers faced significant hurdles. Within the 48-hour window, they were required to navigate multiple screens before being redirected to contact customer service. This process often led consumers into an "infinite loop" without cancelling or forced them through yet another set of screens to reach a manual customer service option. Such practices undermined Uber's promise of easy cancellation and exemplify how interface design can create substantial barriers to consumer choice.

B. Recognizing Genuine Content

The rise of the Internet has led to an explosion of content, much of which is generated by users themselves. Online reviews, for instance, offer detailed evaluations of products and services and have been shown to drive consumer demand towards highly rated items (Anderson and Magruder, 2012; Luca, 2011; Lewis and Zervas, 2020). Search engines, in turn, help consumers navigate this abundance of information by sorting and ranking content to match users' queries.

The high value consumers place on seemingly organic content can lead firms to misrepresent the nature or source of information (He, Hollenbeck and Proserpio, 2022; Luca and Zervas, 2016; Mayzlin, Dover and Chevalier, 2014). Companies may seek to manipulate consumer perception by generating fake reviews, selling fake followers or likes, suppressing negative feedback, advertising fraudulent products and services, or concealing that certain content is sponsored and so blurring the line between advertising and organic content.[7]

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[5] See the FTC's motion for sanctions, available at: https://www.courthousenews.com/wp-content/uploads/2025/05/ftc-sanctions-amazon.pdf.

[6] The FTC's complaint in the Uber case is available at: https://www.ftc.gov/system/files/ftc_gov/pdf/uberonecomplaint.pdf. Uber One provides discounts on ride bookings and food deliveries and costs consumers $99 per year or $9.99 per month.

The FTC's case against Sunday Riley, a cosmetics producer, offers an illustration of how firms fabricate consumer reviews to artificially boost demand.[8] According to the FTC's complaint, the company's eponymous CEO Sunday Riley directed employees to post fake five-star reviews of its products on the Sephora platform and use Virtual Private Networks (VPNs) to conceal their identities and so avoid detection. A manager at the company provided detailed guidance on crafting persuasive reviews, emphasizing that "Credibility is key to the reviews!" In the FashionNova case, the FTC charged that an e-commerce fashion retailer systematically suppressed all customer reviews below four stars and so presented a misleadingly positive impression of products on its platform.[9]

These forms of distortion extend to content producers. In the Devumi case, the FTC alleged that the company sold fake social media metrics, such as followers on LinkedIn and Twitter, and subscribers and views on YouTube, misleading consumers about the popularity of online content.[10] More recently, the FTC issued warning letters to influencers and the trade groups that engaged them, citing failures to disclose sponsorship in advertising campaigns. In particular, the Commission alleged that several dieticians promoting the safety of aspartame and sugar failed to reveal that their endorsements were paid by industry.[11]

More broadly, advertising is the dominant business model for the digital economy. As a result, firms may want to blur the distinction between organic content and paid advertising by providing inadequate disclosures for advertisements (Rayo and Segal (2010)). In response to these concerns, the FTC recently conducted an experiment using eye-tracking technology to evaluate enhanced advertising disclosures in two contexts: search engine results and "native advertisements" that closely resemble articles on news websites (Federal Trade Commission (2017), Johnson et al (2018)). The study found that improved disclosures increased consumers' ability to recognize ads and reduced the time participants spent viewing them.

Finally, another concern is that digital advertisements can expose consumers to fraud. The FTC's case against the lead generation platform MediaAlpha illustrates this risk.[12] The agency alleged that MediaAlpha used misleading advertisements and website names such as "ObamacarePlans.com" and "GovernmentHealthInsurance.com" to attract consumers searching for Affordable Care Act (ACA)–compliant health insurance. Instead of connecting them to legitimate ACA products, the company sold their information to partners marketing expensive, non-comprehensive plans that offered far less coverage. This kind of steering can harm consumers who purchase inferior insurance, leaving them without adequate coverage when they need it most. More broadly, the case illustrates how the architecture of digital advertising

[8] The FTC's complaint in the Sunday Riley case is available at:
https://www.ftc.gov/system/files/documents/cases/192_3008_sunday_riley_complaint_0.pdf.
[9] The FTC's complaint in the FashionNova case is available at:
https://www.ftc.gov/system/files/documents/cases/192_3138_fashion_nova_complaint.pdf.
[10] The FTC's complaint in the Devumi case is available at:
https://www.ftc.gov/system/files/documents/cases/devumi_complaint.pdf
[11] See https://www.ftc.gov/news-events/news/press-releases/2023/11/ftc-warns-two-trade-associations-dozen-influencers-about-social-media-posts-promoting-consumption.
[12] The FTC's complaint in the MediaAlpha case is available at:
https://www.ftc.gov/system/files/ftc_gov/pdf/complaintforpermanentinjunctionmonetaryjudgmentandotherrelief.pdf.

markets can create incentives for intermediaries to profit from deception at the expense of consumer welfare.

C. Pricing

The price mechanism plays a central role in the functioning of a market economy. Prices are a primary driver of consumer search and purchase decisions and guide producers on what to supply. Given this signaling role, the advent of the Internet seemed poised to enhance market efficiency, as lower search costs would enable consumers to compare prices more easily and so intensify competition among producers.

Although digital platforms have enhanced transparency in some areas, firms also employ pricing strategies that obscure true costs and hinder informed consumer choice (Ellison and Ellison 2009). One common tactic is drip or partitioned pricing, in which consumers are shown an attractive initial price only to encounter additional fees later in the purchasing process, leaving the final cost higher than advertised. A second approach arises in markets where prices depend on consumer decisions, such as digital advertising: platforms can adjust complex or opaque pricing mechanisms in ways that participants are unlikely to notice or understand. Finally, many digital products and services—particularly mobile apps—are offered as "free" but impose hidden costs through the collection and use of personal data, leaving consumers unaware of the full price they ultimately pay.

The FTC's case against Greystar, a property management company for more than 800,000 rental units nationwide, offers an example of drip pricing in the housing market.[13] Prospective renters typically search for apartments online by visiting either listing platforms such as Zillow or Apartments.com or property websites directly. According to the complaint, Greystar advertised rental prices on these platforms that excluded mandatory fees, such as package concierge, pest control, and valet trash fees, thereby understating the true cost of renting.

Such mandatory fees were only disclosed later in the leasing process. Prospective tenants often learned of these charges only after investing significant time and, in some cases, money. For example, certain fees were revealed only after renters had completed an application and paid a non-refundable application fee. In other instances, renters reported discovering these additional charges only after signing a lease, at which point switching to another property would require paying substantial lease termination fees.

The Department of Justice's (DOJ) antitrust lawsuit against Google over its dominance in web search illustrates how even sophisticated advertisers may lack awareness of evolving pricing mechanisms in digital markets.[14] Google prices its search advertisements using a variant of the generalized second-price (GSP) auction. In a standard GSP auction, advertisers submit bids and the highest bidder wins the ad placement but pays the amount bid by the second-highest bidder (Edelman, Ostrovsky, and Schwarz 2007). Google's implementation of the auction incorporates

[13] The FTC's complaint in the Greystar case is available here: https://www.ftc.gov/system/files/ftc_gov/pdf/greystar_complaint_-_filed.pdf.

[14] The DOJ's complaint in the Google search case is available here: https://www.tn.gov/content/dam/tn/attorneygeneral/documents/pr/2024/pr24-59-Google.pdf.

additional factors, such as predicted click-through rates (CTR), to calculate what it terms the long-term value of an ad. These additional factors provide "pricing knobs" that allow Google to influence which bidder ultimately wins.

According to the DOJ's complaint, Google made several changes to its auction design over time that had the effect of raising bids and so increasing its advertising revenue. One technique, referred to internally as "squashing," involved artificially inflating the predicted CTR of the runner-up and thereby raising its calculated long-term value. Another modification introduced a randomized generalized second-price auction, in which Google would occasionally swap the scores of the top two bidders, allowing the runner-up to win. These adjustments intensified bidding competition and so increased auction prices.

Notably, Google took active measures to conceal these changes. The company introduced auction modifications gradually to obscure their effects and make price increases indistinguishable from routine market fluctuations. Internal communications reveal concern that transparency could lead advertisers to resist or circumvent the changes. As one internal document noted: "Worry if we tell advertisers they will be impacted, they will attempt to game us and convince us to abandon the experiment. . . . But, if we don't tell them, they will react more naturally (how they'd react if they believed they couldn't influence our decision at all)." Surveys conducted by Google confirmed that advertisers were not aware of the changes: they attributed price increases primarily to their own behavior, increased competition, or seasonal variation, rather than to Google's changes to the auction mechanism.

The FTC's case against the data broker Kochava highlights the potential hidden costs associated with the use of digital services.[15] Kochava collected and sold precise geolocation data on tens to hundreds of millions of users linked to consumers' Mobile Advertising IDs (MAIDs). The company advertised its ability to infer users' home locations based on nighttime device patterns and to identify other apps installed on users' devices. It also facilitated targeted advertising based on sensitive characteristics, such as whether users were expectant parents or had visited hospitals, reproductive health clinics, or COVID-19 testing sites.

Kochava acquired this data from multiple sources, including other data brokers and Software Development Kits (SDKs) embedded in "at least 10,000 apps globally." Given the scale and opacity of these data flows, it would be nearly impossible for consumers to determine which of the many apps on their devices were transmitting data to Kochava. As a result, consumers were effectively unable to make informed choices about whether to share such data in exchange for access to mobile applications.

III. Tools for Enforcement

In this section, I describe the legal authorities that the FTC can wield to protect consumers in digital markets, as well as the distinctive forms of evidence generated by digital platforms that can be leveraged in investigations.

[15] The FTC's complaint in the Kochava case is available here: https://www.ftc.gov/system/files/ftc_gov/pdf/86-SecondAmendedComplaint.pdf.

A. Legal Authorities

The principal statutory authority underpinning the FTC's consumer protection mandate is Section 5 of the FTC Act. Section 5 empowers the agency to prohibit unfair methods of competition and unfair or deceptive acts or practices. A practice is deceptive if it involves a material representation, omission, or other conduct that is likely to mislead a reasonable consumer to their detriment. An act or practice is unfair if it causes or is likely to cause substantial consumer harm that is not reasonably avoidable and is not outweighed by countervailing benefits to consumers or competition.[16] Thus, Section 5 provides a broad and flexible legal foundation to address a wide range of harmful firm behavior.

However, the Supreme Court curtailed the FTC's enforcement capabilities under Section 5 in its 2021 decision in *AMG Capital Management, LLC v. FTC*. In that case, the Court held that Section 13(b) of the FTC Act "does not authorize the Commission to seek, or a court to award, equitable monetary relief such as restitution or disgorgement." Although the FTC retained the authority to pursue injunctive relief, such as to halt ongoing violations, this ruling eliminated a tool the agency had long used to obtain monetary remedies for consumer harm.

In response to the limitations imposed by *AMG Capital*, the FTC has adopted several strategies to maintain effective deterrence of consumer protection violations. One such approach involves partnering with state attorneys general, who have authority under state "Little FTC Acts" that prohibit unfair and deceptive acts and practices. These state laws often provide for monetary remedies or broader enforcement tools. For example, the FTC's case against Greystar was brought jointly with the State of Colorado and pleaded violations of the Colorado Consumer Protection Act.

In addition to the FTC Act, Congress has enacted several statutes that target specific consumer protection issues and provide for monetary relief. For example, the Restore Online Shoppers' Confidence Act (ROSCA), invoked in the Amazon and Uber enforcement actions mentioned above, governs the use of negative option features in the sale of goods and services online.[17] Other statutes that enhance the FTC's authority in digital markets include the CAN-SPAM Act (2003), which regulates commercial email; the Better Online Ticket Sales (BOTS) Act (2016), which addresses ticket-buying bots; and the Consumer Review Fairness Act (2016), which prohibits the use of non-disparagement clauses in consumer contracts.

The FTC also has the ability to write regulations, and it can obtain monetary redress and civil penalties for rule violations. In the last couple of years, the FTC pursued several new rulemaking

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[16] The FTC's policy statements on its unfair and deceptive acts and practices are available here: https://www.ftc.gov/legal-library/browse/ftc-policy-statement-unfairness and https://www.ftc.gov/system/files/documents/public_statements/410531/831014deceptionstmt.pdf.

[17] ROSCA was enacted in 2010 and prohibits charging consumers for goods or services sold in transactions effected on the Internet through a negative option feature unless the seller provides text that clearly and conspicuously discloses all material terms of the transaction before obtaining the consumer's billing information, obtains the consumer's express informed consent for the charges, and provides simple mechanisms for a consumer to stop recurring charges. See https://www.ftc.gov/legal-library/browse/statutes/restore-online-shoppers-confidence-act.

initiatives. Issuing rules involves substantial effort, including conducting cost-benefit analyses of the proposed rule, assessing alternatives to the rule, and responding to public comments on preliminary drafts (Ferguson et al. (2023)).

Many of the recent rules address issues of consumer understanding in digital markets. First, the FTC proposed amendments to the Negative Option Rule, including a "click to cancel" provision requiring that firms make cancellation processes as simple as sign-up. These amendments were ultimately vacated by the Eighth Circuit Court of Appeals. The Commission also enacted the Fake Reviews Rule, which prohibits a range of deceptive review and endorsement practices, including fabricating reviews, suppressing legitimate negative feedback, and paying for biased endorsements. Finally, the Unfair and Deceptive Fees Rule requires firms in the short-term lodging and live event ticketing industries to disclose all mandatory fees upfront in advertised prices.

In contrast to the American enforcement-driven approach, the European Union (EU) has embraced a far more prescriptive regulatory framework for digital markets. The General Data Protection Regulation (GDPR) governs privacy and data security; the AI Act regulates artificial intelligence models; and the Digital Markets Act (DMA) and Digital Services Act (DSA) impose detailed obligations on large digital platforms. Due to the size and economic influence of the EU, these regulations often shape business practices far beyond Europe's borders—a dynamic known as the "Brussels Effect" (Bradford 2020).

Finally, the FTC's authority under Section 6 of the FTC Act gives it an explicit research mandate, empowering the agency to collect information from corporations and publish reports based on that evidence. Lew and Raval (2025) highlight how the FTC has studied user interactions on digital platforms and demonstrate how such research can inform the development of future consumer protection policy.

B. Sources of Evidence

Digital platforms routinely collect vast amounts of data on their consumers. In this section, I show how such data can be used by enforcers to identify and assess potential consumer protection violations. I draw on the FTC's case against Amazon discussed above as a recurring example.

Amazon routinely conducts randomized controlled trials to evaluate the effects of interface design changes on consumer behavior. It ran several experiments testing changes to the Universal Prime Decision Page shown in Figure 1. For example, Amazon tested the effect of altering the text of the yellow enrollment button from "Get FREE two-day shipping" to "Start your 30-day FREE trial", modifying the blue opt-out text on the left from "Continue without fast, free shipping" to "No Thanks", and displaying the price of Prime and its auto-renew feature outside of the fine print.

In addition, Amazon regularly surveys a sample of consumers who cancelled Prime, asking them to indicate their reasons for cancellation. One answer consumers could provide is "I did not mean to signup for Prime", providing direct evidence that some consumers enrolled unintentionally.

Finally, Amazon collects extensive behavioral data on user activity across its platform, including the use of Prime benefits. The company used this data to estimate the share of Prime subscribers who appeared to be "unaware" of their enrollment.

More broadly, investigators can leverage modern text mining techniques to use unstructured consumer feedback such as online reviews and complaints to quantify the extent of recurring consumer problems. For example, Hosken et al. (2025) apply such techniques to classify topics in supermarket reviews, which they use to evaluate why divestitures ordered by the FTC in merger settlements failed.

IV. Conclusion

A striking feature of the Amazon Prime case is the extent of the internal evidence Amazon had gathered showing that its design choices led consumers to enroll in Prime without their consent. Despite this evidence, the company did not revise its practices. Amazon's executives explicitly weighed the trade-off of how many Prime signups Amazon was willing to lose to prevent unintended Prime signups.[18] Ultimately, despite internal warnings to not "let financial impact impede efforts to build a trustworthy [customer experience]" [19] , Amazon decided not to make any changes to its practices, at least until the FTC launched its investigation.

This case underscores a central challenge for the FTC in digital markets: creating sufficient incentives for firms to design interfaces that facilitate consumer understanding and not engage in deceptive and unfair business practices. Without the credible threat of enforcement and meaningful penalties, firms may prioritize short-term revenue over long-term consumer trust. Such behavior ultimately erodes the broader trust that underpins the effective functioning of a market-based economy.

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[18] See page 67 of the Amazon complaint, referring to an Amazon meeting on September 24, 2018, which states that the primary question of the meeting was "how many Prime signups [is] Amazon . . . willing to lose in order to prevent unintended Prime Signup."

[19] See page 72 of the Amazon complaint, referencing a December 16, 2020 memorandum of the Clarity Working Group within Amazon.

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