Using The Purchase Funnel To Analyze Consumer Behavior

by Nikita Piankov and Catherine Tucker; Analysis Group, Inc.

Law360, Boston (March 1, 2018, 11:17 AM EST)


Nikita Piankov


Catherine Tucker

In a wide variety of litigation matters, questions of impact and damages turn on a belief that the defendant's conduct caused consumers to buy more or fewer of a product than they would have otherwise. This belief is often embedded in claims of injury in antitrust, product liability and false advertising matters, as well as remedies in intellectual property disputes.

To prove that this belief is warranted, litigators have typically relied on economists to link the conduct to the alleged effect (e.g., higher price, lower sales), often with the use of regression analysis. However, a standard economics tool such as regression analysis focused only on endpoints may incorrectly infer a causal link between the at-issue conduct (e.g., a price hike) and the endpoint (e.g., higher prices or lower sales) without uncovering underlying complexities in behaviors across consumers that may belie this causality assumption.

Such an approach may miss the complexities of consumer decisions, thereby precluding any relevant conclusion or severely misstating the conduct's effect.[1] Differences in consumer behavior across groups, retail channels and settings can be significant, and without an understanding of the nuances of the product-choice process, the results may be meaningless.[2]

A better understanding of the consumer decision process can fill the gap between, on the one hand, econometric modeling based on end results and, on the other, the inherent complexity of consumer behavior throughout the purchase process. Such a framework is reflected in what economists and marketing experts refer to as the "purchase funnel." The funnel expresses consumer decisions as an ordered process in three stages: becoming aware of a product, considering a product and making a purchase.

Understanding this funnel and the decisions made at each step can clarify the data generating process, and help the expert design and calibrate the analytical model used in litigation. Such a framework can be used both to improve the regression analysis and to lay out the "narrative" behind the statistical relationships. It can also identify the limits of such analyses (e.g., due to the lack of necessary data or lack of common effect).

Key Questions About Consumer Behavior in Different Types of Litigation

The effect of the consumer decision process on outcomes will likely vary across cases.

In antitrust cases, the focus is on consumer harm resulting from the exercise of market power by a firm. Beyond simply asking whether consumers paid higher prices, questions of harm turn on an understanding of consumers' behavior and its relationship to the exercise of market power in particular situations.

For example, Microsoft was famously accused of illegally bundling its Internet Explorer browser with the Windows operating system to limit the distribution of Netscape Navigator, a rival Internet browser.[3] Did providing Internet Explorer with the operating system affect the usage of Netscape? Why or why not? To what extent, and at what points in the purchase decision process?

In a more recent example, the U.S. Department of Justice accused four Michigan hospital systems of conspiring to limit advertising of their services in particular areas, thereby limiting information about competition for patients among the providers.[4] Key questions related to the purchase decision process include: Do consumers pay attention to hospital advertising? To what extent does such advertising drive their choices?

Finally, since class action cases addressing such claims often require demonstration of common impact and a common methodology for assessing damages, understanding the groups or individuals who may actually have been adversely affected by, or those who may have benefited from, such behavior can be critical to plaintiffs and defendants alike.

In intellectual property cases, analyzing hypothetical negotiation is a common approach to estimating damages.[5] If, prior to the alleged infringement, the conflicting parties had negotiated a reasonable royalty for the IP, what would they have agreed on? Such questions routinely come up in cases such as Samsung v. Apple[6] or Oracle v. Google.[7] These cases make clear that when analyzing what each party would have agreed to, it is important to understand how the various products would have fared in the market in the absence of the infringement.

Again, the focus is on consumer choice during the purchase decision process: Do the consumers care about the patented feature? Is it a demand driver? Is it used in product marketing? Would the absence of the patented feature have resulted in a different purchase decision or not?

Similarly, questions of consumer choice and decisions in alternative circumstances routinely arise in false advertising and product liability cases.[8] For example, one issue in Liebeck v. McDonald's was whether the warning on coffee cups was adequate to prevent burn injuries.[9] In another example, a class of consumers sued ADT Security Systems over allegedly deceptive advertising related to ADT's wireless security systems and their ability to withstand hacker attacks.[10]

Again, this raises various questions regarding consumer choices and the effect of information. Do consumers pay attention to the fine print? Are they misled by the absence of a product warning? Would they have changed their behavior if such a warning were present?

The marketing framework described below can help analyze consumer choices and how consumers are affected by the availability, or lack, of information at different touchpoints.

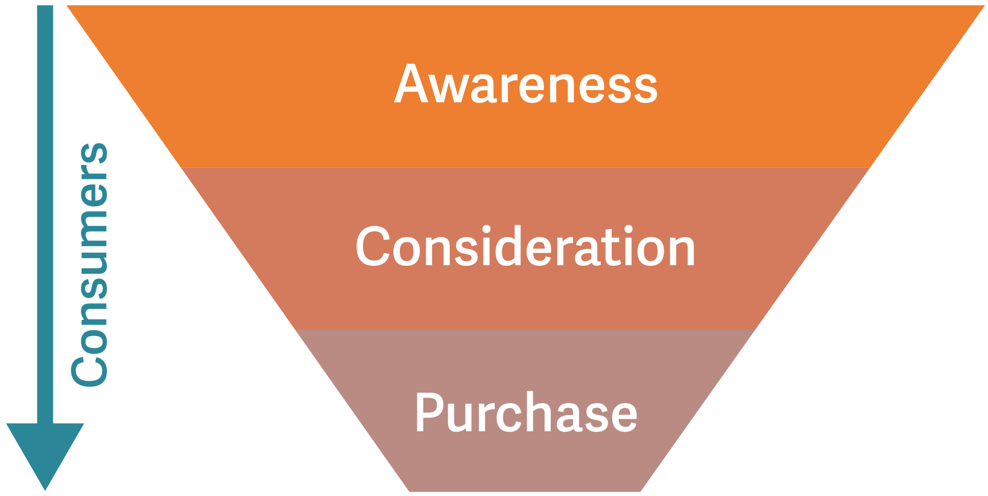
How Consumers Buy Products: The "Purchase Funnel" Framework

Given the importance of consumer decisionmaking to establish impact in a wide variety of cases, it is surprising how often little thought is given in litigation to how consumers actually purchase products. However, economists working at the intersection of microeconomics and marketing have developed an intuitive framework for understanding that process.

This framework can be used in litigation to analyze data and information available for a particular product or service, and to help answer questions like: what makes consumers become aware of a product?; what makes consumers discard some alternatives and focus on others?; and what are the determinants of the purchase decision?

In this framework, the term "purchase funnel" (or sometimes, "marketing funnel") describes the multiple stages of influence that may lead a consumer to purchase a certain product.[11] This "funnel" concept reflects the fact that the firm loses customers at each stage, so that only a small fraction of the potential customers who initially engaged with, for example, an advertisement ever actually buy the product.

These models are widely used by businesses in designing their marketing strategies. The figure below displays a classic "awareness, consideration and purchase" model in the funnel framework; each stage also comes with the need for different marketing touchpoints:



Awareness

At the awareness stage, the consumer learns about the category, brand and product. A consumer might not have been previously aware of a new product category (e.g., robotic vacuum cleaners) or a specific product in a category she is already familiar with. This awareness can result from seeing an ad, observing a product on the street or at a store or hearing about it from a friend. This is the first time when a consumer potentially considers the product.

Many of the marketing efforts by businesses are directed at awareness: If consumers are not aware of your product, there is no chance they will purchase it. Many commonly seen advertisements, whether on TV, in print or online, are directed at this stage of the consumer's journey: making them aware of the product's existence.[12]

Firm behavior during this stage may be at issue in antitrust cases (e.g., advertising restrictions) or in consumer protection litigation (e.g., false/deceptive advertising). For example, in a recent matter concerning efforts to protect trademarks by limiting bidding on trademarked search terms, the U.S. Federal Trade Commission argued that by restricting keyword search advertising in a certain way, a firm might unlawfully limit consumers' awareness of competing online sellers.[13]

In the context of such an investigation, it is important to understand the channels, or touchpoints, through which consumers learn of available alternatives, and whether restrictions on some keyword search auctions have any effect on consumers. Some have argued that many keyword searches are "navigational," and that if the consumer is specifically looking for a particular website, then any competitive advertising could serve only to confuse them, rather than provide additional awareness.

Marketing techniques developed within the purchase funnel framework may assist a factfinder in addressing these questions by evaluating what stage of the process the consumer is at (are they just becoming aware of a product or seller, or are they looking to make a repeat purchase from a familiar seller?).

Consideration

The second stage in a consumer's purchase decision process occurs when the customer seeks information about potential products in the product category and considers various alternatives. At this stage, a customer is seeking information that can help him or her identify the best set of potential product options to evaluate more closely. In general, marketing points of contact here can be more influential than in the awareness stage, since the consumer is actively seeking information and is therefore both more receptive to, and more likely to process, the information gathered.

The research stage of the consumer journey entails evaluating a lot of information, including advertisements and reviews. Not surprisingly, firms use marketing touchpoints at this stage to actively influence consumers' evaluations through various means (including potentially false or deceptive advertisements). This sometimes gives rise to consumer protection litigation, as happened in the aforementioned ADT case.

As another example, consider a Lanham Act case alleging that deceptive claims about product performance caused consumers to select one manufacturer's replacement headlight over a competitor's. One possible first step is to evaluate the touchpoints where the allegedly deceptive information is conveyed. Does it appear in an obscure advertisement distributed to only a handful of consumers? Does it appear on the label of the product, and do consumers pay attention to labels?

One may also want to examine how purchase decisions are made. Do end consumers select their own replacement headlight or does the mechanic select it based on price and experience? Understanding the information dissemination, consumer education and product consideration steps, and the ultimate selection process, may inform experts and factfinders as to the relevance, impact and commonality of these allegations.

Purchase

The third stage in the purchase funnel is the purchase itself, when a customer, after carefully considering various options, chooses a particular product. Here the customer picks the particular retail outlet from which to buy, selects from the possible options for the product (color, for example, or other features) and actually makes the purchase.

Competition issues in the purchase stage typically arise in antitrust litigation. They often result from competitors influencing market participants into restricting the choice for consumers (for example, through a tying or bundling arrangement) or through limiting price competition (for example, through cartelization or minimum price restrictions).

Here again, viewing a company's actions through the lens of the marketing framework can help elucidate whether they had an impact on consumers, and the extent to which consumer decisions and purchases would have been different had the alleged actions not been taken.

The Importance of Understanding the Purchase Process

Many cases require an analysis of impact. Did the alleged conduct affect the allocation of goods, consumer prices or corporate profits or costs? If so, how and by how much? Economists often deal with this issue in a simplified regression framework, where the alleged bad act (e.g., false advertisement) is associated with some impact metric (e.g., sales) through a statistical model.

Often these models do not analyze the behavioral underpinnings of such statistical relationships. This may result in causal inference where the statistical relationship is coincidental. In other instances, a statistical model may be impractical for lack of data or because of a prohibitively complex underlying process.

Applying the marketing framework described above to questions of impact can help fill the gap between statistical models and human behavior, thereby ensuring that the statistical relationship is correctly specified and, where it cannot be completed, providing the "story" based on which conclusions can be drawn. Determining where the alleged bad acts occurred in the purchase funnel process can direct factfinders to critical questions of impact, whether in estimating damages or in examining commonality and typicality.

Given the increased demand for empirical and theoretical proof of impact, frameworks such as the purchase funnel can provide a valuable complement or alternative to statistics for triers of fact to consider.[14] Models developed out of business theory and practice can provide key insights into whether specific actions at issue affect market allocations of sales and profits, and how best to measure the magnitude of such impact.

Nikita Piankov is a vice president in the Boston office of Analysis Group, and Catherine Tucker is the Sloan Distinguished Professor of Management Science and Professor of Marketing at the MIT Sloan School of Management.

Endnotes

1 Regression analysis, done without proper understanding of underlying decision processes, can be severely misspecified — that is, it may include irrelevant independent variables, or conversely exclude relevant ones.

2 Distinguishing across consumer groups is especially critical in class certification cases — for example, in order to examine common effect, or to tie a damages model to the theory of the case.

3 See https://www.theguardian.com/media/2002/jan/23/citynews.business.

4 See https://www.justice.gov/opa/pr/justice-department-sues-four-michigan-hospital-systems-unlawfully-agreeing-limit-marketing.

5 The hypothetical negotiation between the IP holder and the infringer is one of the Georgia-Pacific factors, commonly relied on by the courts in IP cases. See, for example, http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/stlr_hypothetical_negotiation_royalty_damages_jarosz_chapman.pdf.

6 See https://www.law360.com/articles/875192/samsung-v-apple-and-the-trend-toward-incremental-value.

7 See https://www.theguardian.com/technology/2016/may/26/google-wins-copyright-lawsuit-oracle-java-code.

8 "Failure to warn" is one type of product liability claim and is therefore similar in nature to false advertising.

9 See http://www.gwblawfirm.com/liebeck-v-mcdonalds-restaurants-original-coffee-product-liability-case/.

10 See https://www.law360.com/articles/768812/suit-says-adt-security-systems-leave-homes-vulnerable.

11 One of us used this framework in previous research. See, for example, Lambrecht, Seim and Tucker, "Stuck in the adoption funnel: The effect of interruptions in the adoption process on usage," Marketing Science, Vol. 2, pp. 355-367 (2011).

12 In recent years, the nature of this initial marketing has shifted substantially. Traditional advertising channels, such as TV and print, are not nearly as important as they were 20 years ago. New advertising methods, such as online search ads or viral tweets and videos, help promote brands and make them more visible to consumers. A small company, without access to the traditional advertising methods, might not have been a viable competitor in the past, but the availability of significantly cheaper advertising avenues has made entry into various product categories significantly easier than it had been in the past.

13 See https://www.ftc.gov/enforcement/cases-proceedings/141-0200/1-800-contacts-inc-matter. Among other things, the FTC argued that the advertising restrictions deprived consumers of "truthful and nonmisleading information about the prices, products and services offered by online sellers of contact lenses" and "the benefits of vigorous price and service competition among online sellers of contact lenses." https://www.ftc.gov/system/files/documents/cases/160808_1800contactspt3cmpt.pdf, p. 7.

14 For example, in Behrend v. Comcast, the U.S. Supreme Court ruled that the estimation of damages needs to be closely tied to the theory of liability in the case: "The first step in a damages study is the translation of the legal theory of the harmful event into an analysis of the economic impact of that event." In Rail Freight, class certification was denied because the plaintiffs' damages model suffered from a false positives issue — it identified damages for a significant group of customers, which could not have possibly been harmed by the alleged conduct: "[Plaintiffs' expert's] methodology also detects injury where none could exist. ... Common questions of fact cannot predominate where there exists no reliable means of proving classwide injury in fact."