Dynamic Informative Advertising of New Experience Goods

Alexander E. Saak
Research Fellow
Markets, Trade, and Institutions Division
International Food Policy Research Institute
2033 K Street, NW
Washington, DC 20006-1002 USA
e-mail: A.Saak@cgiar.org


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Information content of advertisements often goes beyond product existence and price, and can complement or substitute for learning by purchasing and trying the product. Advertising that complements learning by purchasing is ads for drugs that describe the benefits and likely users and the most common or severe side effects, advertising that substitutes for learning-by-purchasing is free product sampling. Do firms always have incentives to provide detailed product information and facilitate consumer learning in such ways? We study a dynamic model of informative advertising for a new nondurable experience good, asking the following questions: When does the seller offer advertising that complements or substitutes for learning by purchasing? How does advertising intensity vary over time? Are consumers better informed as a result of advertising? How does advertising affect prices? What about its effect on consumer and overall welfare?

Model

Time: continuous, infinite horizon \( t \) is discrete event

Seller: single-vintage, nonresellable product to risk-neutral consumers with no demands; constant unit production cost \( \hat{C} \geq 0 \)

Buyers: ill-informed (for fixed-fee-take WTP for the product \( \theta \), but it is initially unknown)

Learning: Informativeness signal to each consumer at \( t \) in process

Advertising: \( \alpha(t) \) is the percentage of inventory allocated to advertising

\( \gamma(t) = \alpha(t) / (1 + \alpha(t)) \) the degree of substitutability between learning from advertising and consumption experience

\( \phi(t) = 1 - \gamma(t) \) the advertising intensity that is controlled by the seller

\( s(t) \) the state of consumers for \( t \) not informed at \( t = 0 \)

\( v(t) \) the state of consumers for \( t \) informed at \( t = 0 \)

\( d(t) \) is the decision to purchase the product w\( -1 \) a period of length \( dt \)

\( dt \) is the decision to purchase the product w\( -1 \) a period of length \( dt \)

\( z(t) \) the degree of substitutability between learning from advertising and consumption experience

\( c(t) \) advertising cost function

\( h(t) \) the share of consumers not informed at \( t = 0 \)

Conclusions

In this paper, we have analyzed the advertising and pricing policies of a monopolist in a model of advertising that helps consumers learn their valuations for an experience good. We have shown that in a market society where sufficiently low discount rates and average consumer valuation, the equilibrium advertising intensity falls over time. However, the monopolist does not necessarily advertise zero in the beginning when most consumer are in the process of learning their preferences for the good. In a market with a niche market, the path of advertising intensity is Undamped during early stages, and bell-shaped depending on whether advertising complements or substitutes for learning-by-purchasing.

We have also compared the learning outcomes, prices, and welfare in equilibria with advertising that is free of equilibrium without advertising. Although advertising last provides little information to non-buyers, buyers always acquire knowledge about their preferences for the product. Nevertheless, advertising increases the present value of consumer welfare as nonlinear marginal costs for more likely to become informed without any effect of advertising on prices eventually yields. Yet, the present value of social surplus may be reduced by advertising due to excessive advertising in the future (that leaves the value of advertising in the present).

Our modeling strategy can also be used to analyze the evolution of the optimal marketing mix between advertising that substitutes and complements learning-by-purchasing. This can be done by setting the advertising cost \( c(t) \) as a function of the advertising intensity \( \alpha(t) \) and the degree of substitutability between learning from advertising and purchasing \( \gamma(t) \) and allowing the value to choose \( \gamma(t) \) and total advertising mix with different levels of \( \gamma(t) \). Our analysis suggests that advertising that complements learning-by-purchasing will be used in new markets. However, in the case of a niche market, there will be a shift from advertising that complements experiences to advertising that substitutes for learning-by-purchasing in the market survivors. An empirical investigation of how the intensity and content of informative advertising for newly launched nondurable experience goods change over time is desirable (Anderson et al., 2015).

Bibliography