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Author: Rajiv Lal - Miklos Sarvary

e-mail:
MktgSci@notes.cba.ufl.edu

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When and How Is the Internet Likely to Decrease Price Competition?

Rajiv Lal • Miklos Sarvary
Harvard Business School, Morgan Hall, Soldier's Field, Boston, Massachusetts, 02163
rlal@hbs.edu • sarvary@hbs.edu

Abstract

Conventional wisdom seems to claim that, by lowering the cost of distribution and by making search easier for consumer, the introduction of the Internet is likely to intensify price competition. This paper intends to challenge this view by asking: When and how is the Internet likely to decrease the level of price competition between firms? To answer this question, we develop an analytic model with the following characteristics. On the demand side, consumers need to gather information on two types of product attributes: *digital attributes* (which can be communicated on the Web at very low cost) and *nondigital attributes* (for which physical inspection of the product is necessary). Consumers choose between two brands but are familiar with the nondigital attributes of only the brand purchased on the last purchase occasion. On the supply side, firms use traditional stores and the Internet to inform consumers about their products' attributes and to sell their products. In this setup, we show that the impact of the Internet on competition will be radically different depending on the relative importance of parameters describing the relevant shopping and distribution context. Specifically, we find that the introduction of the Internet might lead to monopoly pricing when (1) the proportion of Internet users is high enough, (2) when nondigital attributes are relevant but not overwhelming, (3) when consumers have a more favorable prior about the brand they currently own, and (4) when the purchase situation can be characterized by "destination shopping". More surprising, we also show that in such cases, the use of the Internet not only leads to higher prices but can also discourage consumers from engaging in search. As such, an important message of the paper is that under some conditions the Internet might represent an opportunity for firms to leverage their brand loyalty and increase their profits.

The intuition behind our results is the following. The Internet allows consumers to evaluate digital attributes easily, i.e., without visiting the stores. However, nondigital attributes can only be evaluated through physical presence. As such, for goods where both types of attributes are important, the introduction of the Net changes the effective cost of search for consumers. Without the Internet the cost of search is *the cost of visiting more than one store.* With the introduction of the Net however, nonsearching consumers do not have to undertake the shopping trip at all because they can order products on the Net. Thus, in the presence of the Internet the cost of search is related to *the cost of undertaking the entire shopping trip.* In the case of destination shopping (i.e. when the fixed cost of undertaking the shopping trip is higher than the cost of visiting an additional store), the presence of the Internet creates higher effective search costs for consumers. Given this shift of paradigm in search costs due to the Internet, consumers may not take the risk of searching for products with better nondigital attributes, but instead, remain with the product they are familiar with. This results in increased consumer loyalty, which induces firms to increase their prices.

Our results have important managerial implications. First, they provide guidelines for firms on when (i.e. for which product categories) they should consider expanding their distribution network to the Internet. In this respect, an important additional insight of the paper is that the Internet can lower price competition and lead to reduced consumer search *even* if it is more expensive than the traditional distribution channel. This can easily be the case if distribution through the Internet represents additional costs such as the costs associated with shipping and handling and return policies. Second, the paper also provides guidelines on how to plan the firm's Internet strategy. Interestingly, the results suggest that with the general availability of the Internet the role of stores might actually become more important. While we do not explicitly model a dynamic market, our findings together with Klemperer's (1987) results suggest that stores might have a key role in consumer acquisition, while the Internet can help leverage the acquired customer base through demand fulfillment. This might imply that for certain product categories, firms should actually allocate additional resources to improve their in-store environment when considering the Internet as a complementary distribution channel.

(*Internet*; *Consumer Search*; *Digital/Nondigital Attributes*; *Competition*; *Game Theory*)

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