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Decision Support Systems 40 (2005) 375–388

Decision Support Systems

www.elsevier.com/locate/dsw

Pricing strategies in B2C electronic commerce: analytical and empirical approaches

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Received 22 November 2002; received in revised form 19 April 2004; accepted 19 April 2004
Available online 20 June 2004

Abstract

Although electronic commerce is regarded as a revolution that has transformed the structure of business and the mechanisms of economic systems, research on price competition and strategic behaviors in electronic commerce has been conducted through empirical approaches, yielding conflicting results. Considering the development of technologies supporting electronic commerce, there have been few analytical analyses. In addition, the few existing analytical analyses have not addressed competition behaviors and strategic implications in complex business environments, where conventional offline firms and Internet firms coexist. Also, previous empirical analyses have focused on where products are priced higher (or lower) rather than finding reasons for those differences.

This paper analyzes pricing strategies between conventional offline firms and online firms through a theoretical approach and empirical analysis, and draw some strategic implications with some remarks related to welfare aspects. Especially, the empirical study analyzes whether factors such as the size of market and product characteristics are related to price differences between offline and online channels through statistically testing the main results of the analytical analysis rather than just finding which products are higher in prices depending on channels.

Keywords: Pricing strategies; Price level; Internet retailer; Electronic commerce; Electronic market

1. Introduction

The Internet has fundamentally changed the environment of business, offering business and consumers a powerful communication channel and making it possible for these two entities to come together in more efficient ways by creating new marketplaces. The Internet offers consumers greater benefits from increased information and lower transaction costs, including search costs, and a wider set of choices than those available in the traditional economic environment. It also improves the consumer's bargaining position with vendors, both online and via traditional channels. From the corporate point of view, the Internet provides opportunities to access global markets without having to incur large entry costs or having to keep sizable inventories, as well as improving targeted advertising and sales efforts [1].

While recent research in electronic commerce has been conducted in a variety of areas, there has been

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0167-9236/$ - see front matter
doi:10.1016/j.dss.2004.04.012

little theoretical research on price competition and strategic behaviors. Although electronic commerce is regarded as a revolution that has transformed the structure of business and the mechanisms of economic systems, research on price competition and strategic behaviors in electronic commerce has been conducted through empirical approaches, yielding conflicting results. Considering the development of technologies supporting electronic commerce, there have been few analytical analyses. In addition, the few existing analytical analyses have not addressed competition behaviors and strategic implications in complex business environments, where conventional offline firms and Internet firms coexist. Also, previous empirical analyses have focused on where products are priced higher (or lower) rather than finding reasons for those differences.

The purpose of this study is to analyze pricing strategies between conventional offline firms and online firms through a theoretical approach and empirical analysis, and draw some important implications. In addition we make some remarks related to welfare aspects. Especially, the empirical study analyzes whether factors such as the size of market and product characteristics are related to price differences between offline and online channels through statistically testing the main results of the analytical analysis rather than just finding which products are higher in prices depending on channels.

The analysis of this paper presents several findings. The analysis of competition between conventional offline and online firms reveals why the equilibrium prices are different in electronic commerce despite products being physically homogeneous. The findings indicate that as more consumers have access to the Internet, both offline and online prices drop. If convenience associated with the online purchase becomes greater, the online price tends to exceed the offline price. In addition, the analysis finds that the profits of the online firm can increase as more consumers have Internet access if the online firm is relatively more efficient.

The paper is organized as follows: Section 2 is a background and literature review. Section 3 presents a duopoly model between a conventional offline firm and a pure online firm. Section 4 explores equilibrium prices and draws some implications and provides remarks on the welfare of the producer and the consumer. In Section 5 we analyze the empirical evidence. Conclusions and discussion of future areas of research are provided in the final section.

2. Background and literature review

There are many substantial differences between offline and online retail environments. For example, the conventional offline retailer is based on a physical store where the vendor interacts with the customer. The merchandise is displayed in stores where customers can examine individual products, possibly sample them, and then, if desired, purchase and take them home immediately. From this viewpoint, customers incur some costs related to transportation and time consumption. Conventional physical retailers have several advantages over their pure online competitors, such as owning an established brand name, strong bargaining power vis-à-vis suppliers, distribution infrastructure, and the shopping trip offering a physical shopping experience [14]. However, there are also a number of drawbacks associated with the physical-retail model, including high investment cost and a limited number of hours and days of operation.

An online retailer comprises some or all of the following features. Depending on the product types, online retailing allows the customer to access online information about the product, place an order, pay for the product, and in the case of digital products (such as software, music, video, etc.), have them delivered instantaneously through the Internet. Because of the nature of online retailing, a number of advantages over traditional physical retailers can be identified, such as wide reach, exhaustive product selections, little infrastructure requirements, unlimited hours of operation, and a high degree of scalability. However, the online retailer also has drawbacks in terms of e-fulfillment issues arising from the physical delivery of real orders in the virtual world.

Kauffman and Walden [19] and Wiseman [28] review and effectively organize economic research issues related to Internet Commerce. Bakos [6] and Harrington [17] analyze the relation between search costs and product price in electronic marketplaces through a circular city model. Balasubramanian [9] shows a strategic analysis of competition between a conventional offline store and a direct mail store