Comparison in Online Comparison Shopping Services

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ABSTRACT
Retail markets in online comparison shopping websites are extremely competitive, yet firms voluntarily list in these services. The objective of this paper is to study competition and seller profitability in comparison shopping markets. In the proposed model, two profit-maximizing sellers sell a homogeneous good to Bayesian risk-neutral buyers. Buyers use a reputation system to update their beliefs about the sellers and purchase from the seller that maximizes the buyer’s expected surplus. The model shows that a seller’s profit depends on the distribution of buyer beliefs. A good reputation increases a seller’s profits. Empirical testing is carried out using data from Pricegrabber, a popular comparison shopping website. The evidence indicates that a good reputation may support price premiums as the model suggests.

Keywords: Electronic Commerce, Electronic Markets, Industrial Organization, Information Systems, Online Services, Reputation Systems

INTRODUCTION
Comparison shopping services are electronic marketplaces that lower buyer search costs by gathering and distributing information about sellers. A buyer who wishes to purchase a good or service uses a comparison shopping website to receive a list of price quotes from the sellers that offer the desired product. As a result, the buyer can choose the most preferable offer in terms of price, delivery, payment and the seller’s quality.

Comparison shopping services relate to information clearinghouse models in the economic literature. In Varian (1980), a fraction of buyers uses the information clearinghouse, such as a newspaper, to locate the seller who sets the lowest price, while other buyers are evenly distributed among all sellers. As a result, buyer heterogeneity produces price dispersion. Baye and Morgan (2001) take information clearinghouse models to electronic markets. They suggest that an optimizing monopolistic operator of a comparison shopping service sets fees for sellers high enough to induce some of them to stay out of the service. In contrast, the fees for buyers are low enough to encourage full participation. In consequence, the prices are lower in the comparison shopping service than in the outside market, which encourages buyers to use the service.

The ease of comparing product offerings in comparison shopping websites increases efficiency in electronic markets. From the buyer’s perspective, comparison shopping markets have potential to increase consumer surplus by miti-
gating the buyer’s information costs and spurring competition among sellers. From the seller’s perspective, comparison shopping leads to cutthroat price competition because there is little room for product differentiation in e-commerce and free entry erases supernormal profits.

Despite the challenging market environment, empirical evidence shows that well-known e-commerce giants as well as less-known small firms participate in comparison shopping markets. Since the operators of comparison shopping websites often charge fees from the listed vendors, benefits from participation must exceed the costs accruing to sellers. For a small firm, a rationale to participate is that a comparison shopping market brings visibility at low costs (Wan, 2006). Visibility is vital because buyers are aware of a fraction of sellers in the market (Grover et al., 2006). To attract unaware buyers to their online stores, sellers have to advertise or organize promotional alliances with search engines (Latcovich & Howard, 2001; Filson, 2004). On the other hand, a firm must pursue an aggressive pricing strategy which restrains profitability. While incentives to participate in comparison shopping services are not obvious, some benefits exist. First, firms may organize periodical sales or inventory clear outs and occasionally win the bidding contest as suggested by Varian (1980). Second, as more buyers learn to use the search mechanisms available on the Internet for commercial purposes, it is harder to maintain prices above the competitive level. Third, participation gives an opportunity to monitor prices or issue a commitment to certain price level. Smith (2001) entertains a possibility that dominant sellers could use a comparison shopping service in collusion to maintain higher prices.

Price alone cannot explain competition in comparison shopping markets because problems of asymmetric information and moral hazard are inherent in e-markets. The lack of direct contact between buyers and sellers raises concerns about opportunistic fraudulent behavior (Friedman et al. 2000). In markets of perfect and complete information, every action an agent takes and has ever taken is observable to other agents rendering reputation irrelevant in such markets. Asymmetric information creates incentives to reputation building. Cabral (2005) defines reputation as “the situation when agents believe a particular agent to be something.” This belief may be crucial for commercial transactions. For this reason, seller reputations may play a large role in electronic markets. To address this problem, many e-commerce marketplaces have introduced reputation systems which gather and distribute aggregated information about the past behavior of sellers to buyers (Resnick et al., 2000).

As the online business environment cultivates concerns over the trustworthiness of a seller, this may impede market entry because buyers trust the established firms more than newcomers (Resnick et al., 2006). Hence, economic benefits of reputation building may explain the proliferation of reputation systems. First, reputation can be viewed as an asset. In Klein and Leffler (1981) and Shapiro (1983), a firm invests in reputation by selling high quality products at loss initially but earning a price premium on the established reputation later. Reputation as an asset implies that established reputations can be bought. As a result, they may not be a good signal of quality because incompetent firms can buy good reputations (Mailath & Samuelson, 2001). Second, Klein, and Leffler (1981) suggest that consumers view a seller’s reputation as protection for contractual obligations. A price premium earned on a reputation induces a firm to maintain good quality because the profit stream from good quality products exceeds the gains from cheating. Hörner (2002) argues that this does not provide sufficient incentives to maintain good quality. Instead, competition provides such incentives by creating an outside option to buyers who can patronize the seller’s rival if they detect cheating.

While electronic markets are notoriously competitive, comparison shopping services with reputation systems may provide simultaneously a low-cost entry point to the market as well as insulation from price competition. Zhou et al. (2008) present a model where they show that a reputation system reduces asymmetric
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