NEUTRAL VERSUS BIASED MARKETPLACES: A COMPARISON OF ELECTRONIC B2B MARKETPLACES WITH DIFFERENT OWNERSHIP STRUCTURES

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Extended Abstract[1]

Despite the tough environment dot-com firms are facing, electronic business-to-business (B2B) marketplaces are becoming an important and growing part of electronic commerce. An important question in the context of electronic B2B marketplaces concerns the ownership structure of B2B marketplaces. At the advent of electronic B2B marketplaces, "neutral marketplaces," independent of buyers and suppliers, were commonplace. Later, incumbent companies (suppliers or buyers) came together to create "biased marketplaces."

Both structures have their strengths and weaknesses in creating successful B2B marketplaces. Independent intermediaries who own neutral marketplaces claim that they have expertise in information technology and credibility in terms of neutrality. But they also have some problems, an important one being the lack of commitment of buyers or suppliers. Since they are independent from both suppliers and buyers, there is no guarantee that they will adopt such a marketplace. There is a high risk of failure when a neutral marketplace does not attract suppliers and buyers. The second problem is that once buyers and suppliers adopt a neutral marketplace, the intermediary is free to charge high prices from both buyers and suppliers. Biased marketplaces claim that they are in a better position to make successful marketplaces since they are guaranteed to receive a larger volume of their owner's transactions to achieve liquidity. Also, they claim their marketplaces are better because of their industry-specific expertise. But, as observed in the case of marketplaces for airline tickets and automobile parts, there is a great deal of concern about the fairness of these biased marketplaces. Buyer or supplier owned marketplaces raise the possibility that the owners of such marketplaces could devise rules or use proprietary market information to gain unfair advantage. For example, the Federal Trade Commission investigated the automobile parts marketplace proposed by major automobile manufacturers about the possibility of a price cartel and other oligopoly-related issues (*Los Angeles Times* 2000). However, the owners of the biased marketplaces claim that they only wish to reduce their processing cost and derive profits from transaction fees.

There are many neutral and biased marketplaces with the strengths and weaknesses discussed above. However, it is not clear as to which marketplace will be better in terms of the surplus generated for each party: intermediaries, suppliers, or buyers? Who will be the winners in the competition between marketplaces? In this research, we analyze and compare neutral and biased

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marketplaces in terms of price, market-share, and surplus generated when markets exhibit network effects. We also examine the social welfare and competitiveness of different marketplaces. We analyze three B2B marketplaces with different ownership structures: neutral, buyer-sided, and supplier-sided.

In B2B marketplaces, the value of a marketplace to suppliers is higher when there are more buyers in the marketplace because suppliers can expect to find a better match (price and quality). This is a positive network externality. Similarly, buyers' valuation of a marketplace is higher when it offers more suppliers. The marketplace can attract more buyers and suppliers by reducing its fees; however this reduces the profits from each buyer and supplier. In our analysis, these factors affect the optimal pricing strategy and optimal market share of B2B intermediaries.

We assume that there are a large number of suppliers and buyers and individually they cannot impact the supply or demand in the marketplace. A neutral intermediary is one that is neither a buyer nor a supplier in the marketplace whereas a biased marketplace is owned either by buyers or by sellers participating in the marketplace, each of which own an equal share of the marketplace. We find that biased marketplaces provide services at a lower price than neutral marketplaces. Additionally, a larger number of buyers and suppliers would use a biased marketplace compared to a neutral marketplace. Which is the better market mechanism? Based on our assumptions, biased marketplaces are better than neutral marketplaces in terms of total surplus. We also find that marketplaces owned by buyers generate larger total surplus than marketplaces owned by suppliers. Even though the party (buyer or supplier) which owns the marketplace receives larger benefits, we find that others also benefit from larger network externalities.

Some observers suggest that electronic B2B marketplaces may eventually evolve to a form of ownership which is open to all to increase the total surplus for all (Wise and Morrison 2000). However, one concern is the difficulty of forming a large pool of companies to make a marketplace. We show that the optimal ownership structure of the marketplace depends on the nature of the industry in which the marketplace exists. The benefit of a biased marketplace, in particular, comes from a large pool. Thus, if forming a large pool is not easy, there will be opportunities for neutral intermediaries. For example, in an industry where cooperation among buyers and suppliers is difficult, the chances of success are higher for neutral intermediaries.

Some neutral intermediaries such as FreeMarkets that were quick to launch marketplaces have already established a bulk of buyers and suppliers, thus providing some liquidity on the marketplace. The first mover advantage creates entry barriers for new entrants. These kinds of dynamic factors, which are not examined in our model, should be considered when we analyze real-life cases. In this research, we assume a monopolistic intermediary and a single period game. This can be extended to a dynamic model with multiple periods. Also, a duopoly model, which considers competition between intermediaries in electronic markets, will be examined in future research. However, because of the characteristics of the B2B marketplace such as network externalities, it is possible that, in certain market segments, only one marketplace will eventually be successful. In financial markets, for instance, a single exchange tends to win most trading and profits.

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