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Markets for Product Modification Information

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Abstract

An important product strategy for firms in mature markets is value-adding modifications to existing products. Marketing information that reveals consumers' preferences, buying habits, and lifestyle is critical for the identification of such product modifications. We consider two types of value-adding modifications that are often facilitated by marketing information: *retention*-type modifications that increase the attractiveness of a product to a firm's loyal customers, and *conquesting*-type modifications that allow a firm to increase the appeal of its product to a competitor's loyal customers. We examine two aspects of the markets for product modification information: (1) the manner in which retention and conquesting modifications affect competition between downstream firms, and (2) the optimal selling and pricing policies for a vendor who markets product modification information. We consider several aspects of the vendor's contracting problem, including how a vendor should package and target the information to the downstream firms and whether the vendor should limit the type of information that is sold. This research also examines when a vendor can gain by offering exclusivity to a firm.

We address these issues in a model consisting of an information vendor facing two downstream firms that sell differentiated products. The model analyzes how information contracting is affected by differentiation in the downstream market and the quality of the information (in terms of how "impactful" the resulting modifications are). We analyze two possible scenarios. In the first, the information facilitates modifications that increase the appeal of products to the loyal customers of only one of the two downstream firms (i.e., one-sided information). In the second scenario, the information facilitates modifications that are attractive to the loyal consumers of both the firms (i.e., two-sided information).

The effect of modifications on downstream competition

depends on whether they are of the retention or the conquesting type. A retention-type modification increases the "effective" differentiation between the firms and softens price competition. Conquesting modifications, however, have benefits as well as associated costs. A conquesting modification of low impact reduces the "effective" differentiation between competing products and leads to increased price competition. However, when conquesting modifications are of sufficiently high impact, they also have the benefit of helping a firm to capture the customers of the competitor.

The vendor's strategy for one-sided information always involves selling to one firm, the firm for which the modifications are of the retention type. When the identified modifications are of low impact, this result is expected because conquesting modifications are *profit-reducing* for downstream firms. However, even when the information identifies high-impact modifications (and positive profits are generated by selling the information as conquesting information), the vendor is strictly better off by targeting his information to the firm for which the modification is the retention type. With two-sided information, the equilibrium strategy is for the vendor to sell the complete packet of information (information on both retention and conquesting modifications) to both downstream firms. However, in equilibrium, both firms only implement retention-type modifications. The information on conquesting modifications is "passive" in the sense that it is never used by downstream firms. Yet the vendor makes strictly greater profit by including it in the packet. This obtains because the price charged for information depends critically on the situation an individual firm encounters by *not* buying the information. The presence of conquesting information in the packet puts a nonbuyer in a worse situation, and this underlines the "passive power of information." The vendor gains by including the conquesting information even though it is not used in equilibrium.

(Marketing of Information; Information Packaging; Selling Contracts; Retention Modifications; Conquesting Modifications; Product Modifications; Passive Power of Information)