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Examining relationships between the return policy, product quality, and pricing strategy in online direct selling

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ABSTRACT

In online direct selling, a customer will not experience the product when making the purchase decision. Concerns about product quality and the return policy may prevent the customer from buying the product. In this paper, we develop several theoretical models to examine the impact of online distributor's return policy, product quality and pricing strategy on the customer's purchase and the return decisions. We categorize customers based on their purchase and return behaviors and discriminate distributors based on whether they position their strategy as cost- or price-driven. We find that decisions about the return policy are mutual and complementary with product quality and pricing strategies. In addition, we study direct distributor's pricing strategy, the return policy and the quality policy in four scenarios. The scenarios include situations where customer's demand is sensitive to price or the return policy, as well as where return is sensitive to the return policy or quality. Further, a special case with full refund is analyzed. Finally, we provide a numerical example to simulate the effects of demand sensitivity and return sensitivity on distributor's decisions and profits.

1. Introduction

Manufacturers have introduced online direct selling into their business operations, which sells directly from manufacturers to consumers. As of 2009, about 42% of the top suppliers in various industries (e.g., Hewlett-Packard, IBM, Eastman Kodak, Nike and Apple) deployed direct marketing strategy (Yoo and Lee, 2011). Sales from direct marketing grew to $2,150 billion in 2009, which was about 10 percent of the GDP of the US (Marketing Chart, 2009). On the other hand, increasing product returns are seen in online direct selling. The total cost of returned products from online stores was about $11 billion, which resulted in a loss of about $1.5–2.5 billion in revenue (Mukhopadhyay and Setoputro, 2007).

Online direct selling involves the following activities. First, the distributor describes product information on the website, such as quality, appearance and usage. Consumers then make their purchase decisions based on product description, their commitment to the product, and the credit rating of the distributor. A consumer cannot experience the product until receiving it. Once the consumer receives the purchase, a final decision is made on whether to accept the product or return it to the distributor (Teo and Yeong, 2003). Because of the heterogeneity of consumer demands and the diversity of the quality in the product and service, the return policy becomes especially important in online selling. More than 70 percent of online consumers consider return policies before making purchase decisions (Su, 2009). While return policies such as return compensation can stimulate consumer demand and correspondingly increase sales, these policies may result in increasing returns and higher return costs. Therefore, the direct distributor should balance these two possible outcomes in the development of return policy.

Quality is closely related to return. Low quality products and service reduces customer satisfaction and leads to frequent returns, while high quality products and service can satisfy the customer and reduce the number of returns. At the same time, high quality products and service deserve high selling prices because higher prices signal better quality (Kirmani and Rao, 2000; Whitefield and Duffy, 2012). However, higher prices also lead to decreasing customer demand, especially when customer demand is price-sensitive. When consumers are not very sensitive to price, the direct distributor can adopt a “high quality, high price” policy, even while improving quality. Rabinovich et al. (2008) found that online retailer's pricing strategy is dependent on product and service quality.

The inspiration of this paper comes from the direct marketing case of Dell Computers Corp. As the world leader in the computer industry's direct selling practice, Dell Corp. pursues a unique business philosophy of “direct customer contact”. In order to succeed in the direct selling market, Dell has developed a sophisticated policy for quality, price and return. Generally, for high-end

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home/personal computers which generally have better quality and higher price, Dell allows a longer return duration for customers who buy these high-end computers. On the other hand, for low-end computers, which have low quality and low price, Dell provides a one-year after-sales service at no charge. Dell also provides higher return compensation and longer return duration for products, which are sold at high prices. Other strategies include the "Extended Warranty" service. In addition, Dell provides online service activities on its direct selling channel such as online inquiry and order checking, which are believed to be important factors that influence sales and returns (Refer to www.dell.com.cn).

How do managers make systematic decisions based on the return policy, the quality strategy and the pricing strategy in a synthetic manner, especially when realizing that there are different types of customer demands and different return expectations? This is an interesting while challenging question for direct distributors. Due to the limited knowledge about the complex and reciprocal influences among the three factors, and inadequate understandings of the demand and return behaviors among different types of customers, direct distributors will face difficulty when making optimal integrated decisions.

In order to address the complex relationships between the return policy, product quality and pricing strategy, this paper aims to address the following questions:

(1) How is the direct distributor's optimal return policy affected by the customer's purchase and return decisions? Given that customer returns are sensitive to the return policy as well as the quality of the product and service, how should the direct distributor maximize his/her profits by means of different pricing, quality and return policies?
(2) How do optimal return policy, customer purchase decisions and return decisions affect the direct distributor's pricing policy? Given that customer demand is sensitive to the selling price and return policy, how should the direct distributor determine his/her price and return policy to maximize profit margins?
(3) How do the return policy, pricing strategy, customer purchase decisions and return decisions jointly influence the distributor's service and the quality policies? When customer return is sensitive to quality, and customer demand is sensitive to the selling price and the return policy, how should the direct distributor determine his/her optimal service and quality level?
(4) For different types of customer demand and return, how could the direct distributor minimize return quantity through an appropriate mix of pricing decision, the quality policy and the return policy? How should the direct distributor determine his/her strategic position, given different customer demand types and return types? That is, how to choose between a "cost-driven" type, which provides low-cost product and service, and a "price-driven" type, which provides high quality product and service?

The rest of the paper is organized as follows. In the next section, we review relevant literature. Key assumptions and the general model are outlined in Section 3. In Section 4, we present and discuss the results of our analysis. Then, we elaborate a special case of full refund in Section 5. We present the results of a numerical study in Section 6. In Section 7, we provide concluding remarks and offer some direction for future work. All proofs are provided in the Appendix.

2. Literature review

In this section, we provide a review of relevant research on product returns and direct sales, and we show how we position our research at the intersection of these two streams of literature.

The majority of the product return literature focuses on B2B return policies between the manufacturer (supplier) and the retailer in a supply chain. These studies examine the effect of a return contract on the retailer's order quantity and supply chain coordination (Pasternack, 1985; Emmons and Gilbert, 1998; Webster and Weng, 2000; Yao et al., 2005; Cai et al., 2009). There is limited literature on return policies in business to consumer (B2C) relationships, and the literature is especially limited regarding how businesses' return policies affects customer demands and returns.

Prior studies have examined how consumers react to different return policies in the context of general retailing (Hess and Mayhew, 1997; Davis et al., 1998; Shulman et al., 2009; Ai et al., 2012). However, the effect of the retailer's return policy on customer purchase decisions may differ in direct sales compared to brick and mortar stores (Wood, 2001; Huang et al., 2011). The return policy of the direct distributor, as well as the quality of the product and service, may directly influence the sale and return of the product.

The second focus of the literature examines direct sales problems. The majority of this literature concentrates on channel choice and competition and cooperation among the channels (Seifert et al., 2006; Chen et al., 2008; Xiao and Choi, 2009). A limited scholarly effort has integrated product return in the direct sales model and examined the impact of product return on other important variables in the direct sales model. Mukhopadhyay and Setoputro (2004) analyze how pricing and return policies influence customer purchase and return decisions under the direct sales model. In their study, the authors assume that return quantity depends on the return policy, and the authors do not consider other factors such as product and service quality. Yu and Wang (2008) study the optimal return policy and marketing strategy under the direct sales model through a hybrid data mining approach. They examine return policies and customer satisfaction, as well as the balance between operational cost and product sales. Bonifield et al. (2010) examines the relationship between quality and the flexible degree of return policies under a direct sales model. Mukhopadhyay and Setoputro (2007) further consider the direct distributors' multiple-stage pricing, the return policy and the quality policy.

Although the prior literature includes findings on product return, these studies have limited knowledge about product return from customers of different segments, or from the perspective of the direct distributor's strategic positioning. This paper elaborates customer segmentation in the direct sales market. For example, customer demand is sensitive to price or the return policy, and return quantity is sensitive to quality or the return policy.

The main contributions of this paper are summarized as follows.

First, we integrate product quality into the direct sales model that examines product returns. Most prior literature only investigates refund policy. This paper posits that customer return depends on both the selling price and product quality, and the more important factor is product quality. In this setting, we study the direct distributor's joint decisions of the selling price, the quality policy and the return policy.

Second, we identify several types of customer demands and returns. The types of customer demands include "sensitive to price" and "sensitive to return", while the types of customer returns include "sensitive to return" and "sensitive to quality". We posit that the direct distributor should respond to demand and return by identifying these types of customers.

Third, by integrating quality-control cost with customer demand and return types, we investigate the direct distributor's strategic positioning policies, for example, "high quality, high price and lenient return" or "low quality, low price and full refund".