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Pricing Decision for New and Remanufactured Products in a Closed-loop Supply Chain with a Separate Sales-channel

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Abstract

Remanufacturing is a recovery process that transforms a used product into a "like-new" product, which usually comes with a warranty similar to that of the new product. Many manufacturers are concerned that remanufacturing might cannibalize the new product's sales. Recent development shows an increasing trend in selling products through non-traditional channels, such as a manufacturer's direct channel or an e-channel. A pricing decision model is developed for short life-cycle products in a closed-loop supply chain that consists of the manufacturer, retailer, and collector. The new product is sold via traditional retail stores and the remanufactured product is sold via the manufacturer's direct channel. There are two scaling factors introduced in the model: (1) customer acceptance of buying a remanufactured product (reman-acceptance); (2) customer preference for buying a remanufactured product via a direct channel (direct-channel-preference). The results show that implementing a separate channel can improve the total supply chain's profit compared to the single-channel approach. It is also found that the two scaling factors influence both the pricing decisions and profits of supply-chain members.

Keywords

Pricing; Remanufacturing; Separate sales-channel; Short life-cycle product.