

The influence of consumer recommendations on advertising strategies in the optimal goodwill model with market segmentation

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We propose a new dynamic model of product goodwill where a product is sold in many market segments, and where the segments are indicated by the usage experience of consumers. The main novelty of this model is that the product goodwill in a segment of new consumers depends not only on advertising effort, but also on consumer recommendations, for which we introduce a mathematical representation. The dynamics of product goodwill is described by a partial differential equation and is used in an optimal control model. The control variable is the company's advertising efforts different in each segments. The aim of the control model is maximized company's profits. Using the maximum principle, we numerically find the optimal advertising strategies and corresponding optimal goodwill paths. The sensitivity of these solutions is analysed. We identify two types of optimal advertising campaign: 'strengthening' and 'supportive'. They may assume different shapes and levels depending on the market segment and time. These experiments highlight the need for both researchers and managers to consider a segmented advertising companies and consumer recommendation in creating successful policy in enhancing product goodwill and building brand loyalty.