Employing A-B Tests for Optimizing Prices Levels in eCommerce Applications

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Employing A-B Tests for Optimizing Prices Levels in E-Commerce Applications

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Abstract:
Price dispersion in the Internet is a well studied phenomenon. It enables companies to adjust prices to a level appropriate to their strategy. This paper deals with question how Internet retailers should do so. The discussed method optimizes short- and long-term profitability by determining the exact demand curve. The method involves the application of empirical price tests. For this purpose visitors of an Internet retailer are divided in statistically identical subgroups. Using the A-B testing method different prices are shown to each subgroup and the conversion rate as a function of price is calculated. We describe the organizational requirements, the technical approach, and the statistical analysis applied to determine the price optimizing the per-order profit and the average customer lifetime value. A field study carried out with a large Internet retailer is presented and shows that the company was able to optimize a specific price component and thus increase the contribution margin per order by about 7% while at the same time the customer lifetime value could be enhanced by 13%. We conclude that the discussed method could be applied to answer further research questions such as the temporal variation of demand curves.