This paper develops a model for capturing continuous heterogeneity in the joint distribution of reservation prices for products and bundles. Our model is derived from utility theory and captures both within- and among-subject variability. Furthermore, it provides dollar-metric reservation prices and individual-level estimates that allow the firm to target customers and develop customized and nonlinear pricing policies.

Our experiments show that, regardless of whether the products are durables or non-durables, the model captures heterogeneity and predicts well. Models that assume homogeneity perform poorly, especially in predicting choice of the bundle. Furthermore, the methodology is robust even when respondents evaluate few profiles.

Self-stated reservation prices do not have any informational content beyond that contained in the basic model. The direct elicitation method appears to understate (overstate) the variation in reservation prices across consumers for low-priced (high-priced) products and bundles. Hence this method yields biased demand estimates and leads to suboptimal product-line pricing policy.

The optimization results show that the product-line pricing policy depends on the degree of heterogeneity in the reservation prices of the individual products and the bundle. A uniformly high-price strategy for all products and bundles is optimal when heterogeneity is high. Otherwise, a hybrid strategy is optimal.

(Bundling; Reservation Prices; Optimal Pricing; Consumer Heterogeneity; Multinomial Probit Models; Conjoint Analysis; Bayesian Models)

1. Introduction

Bundling is prevalent across a wide spectrum of industries ranging from consumer durable products (e.g., automobile options) to high-technology products (e.g., software suites such as Microsoft’s Office 2000) to the service sector (including nonprofit organizations). Furthermore, bundling strategies are becoming increasingly important as strategic partnerships and strategic alliances proliferate, especially among firms that sell information goods on the Internet.

Although the theoretical literature on bundling has burgeoned (see §2 for a detailed review), three important methodological questions remain: Can one develop a general empirical methodology for capturing heterogeneity in reservation prices? Can the methodology capture general patterns of substitutability and complementarity? Is the method robust for durables and nondurables?

This paper has three main objectives. The first is to develop and test a theory-based model that captures continuous heterogeneity in the joint distribution of reservation prices for individual products and bundles. The second is to demonstrate how one can test theoretical assumptions (e.g., complementarity