Product-Line Pricing: Optimum or Pessimum?

By

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Date: Monday, 3 September 2007
Time: 3:30 p.m. - 4:30 p.m.
Venue: M1502

All interested are welcome
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ABSTRACT

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We consider three interesting classes of problems that arise regarding a product line. First, for a given a degree of demand interaction, what is the best way to price the line? Second, what is the relationship between the pricing policy and product-line breadth? Third, for a given pricing policy, what is the most profitable degree of product differentiation? We examine these problems from the viewpoint of the manufacturer, the retailer, and the channel with a bilateral-monopoly model in which two demand-related products may be produced and distributed. We allow the channel to sell (a) only the $i$th product, (b) only the $j$th product, (c) both products with non-product-line pricing (NPLP), or (d) both products with product-line pricing (PLP). We prove that PLP is the profit-maximizing solution in a centralized channel. We also prove that PLP is the equilibrium solution in a decentralized channel that is organized as Vertical-Nash or as Stackelberg-Leader. By “equilibrium” we mean that it is in the manufacturer’s (retailer’s) interest for both products to be produced (distributed) using PLP, no matter what pricing policy the other channel member chooses.

Hidden beneath this PLP-oriented result are four non-obvious insights. First, when products in a decentralized channel are moderately-to-highly differentiated, NPLP maximizes profits of the channel, the manufacturer, and the retailer. In contrast, PLP is more profitable only for minimally-differentiated products. Divergence between the profit-maximizing strategy and the equilibrium strategy occurs because the PLP vs. NPLP choice creates a prisoner’s dilemma over most parametric values: what is in a channel member’s individual interest is not in their collective interest. Second, whether the channel is centralized or decentralized, PLP encourages a broader product line than does NPLP when the products are not too differentiated. Third, consumers are worse off under PLP than NPLP because prices are higher with PLP. Partially compensating for this price effect, the PLP–product line is broader at some parametric values. Fourth, when differentiation is costly, optimal product-line differentiation is typically greater under NPLP than under PLP. Thus, while product-line pricing is the equilibrium pricing policy, for a wide range of demand and cost conditions it is a channel “pessimum” relative to non-product-line pricing.
BIOGRAPHY

Professor Charles A. Ingene is Distinguished Chair of Business Administration at the University of Mississippi. He was previously the Nordstrom Professor of Retail Marketing at the University of Washington. He has been a visiting professor at the University of Virginia (as Frank Talbot Jr. Visiting Professor 1988 – 1989) and at Chinese University of Hong Kong (as Wilson Wang Distinguished International Professor 1992 and 1997 – 1999).

Ingene was educated at Washington University in St. Louis (A. B. cum laude, 1969) and Brown University (Ph.D., 1975). He has been named as the inaugural Arts and Sciences Distinguished Alumnus (Washington University in St. Louis, 1999), the Burlington Northern Distinguished Scholar (University of Washington, 1985), the Nordstrom Award for Teaching Excellence (University of Washington, 1983, 1985), the Seafirst Faculty Excellence Award (University of Washington, 1986), and the MBA Professor of the Year (University of Mississippi, 2002, 2005). He has twice placed in the Journal of Retailing Best Paper Award (1985, 1997). He was named a Best Reviewer by the Journal of the Academy of Marketing Science (1997 – 2000) and the Journal of Retailing (2005).


He has consulted for a variety firms on service provision, including General Motors and Seafirst Bank; and has testified as an expert witness on retailing issues, including on behalf of the Federal Trade Commission in their successful suit against Toys-R-Us and for Costco in their successful defense before the Fair Trade Commission (Taiwan). He has taught several executive programs, including for the Bank of China, 3M—China, Cerveceria Cuauhtemoc Moctezuma, Milliken, and Seafirst Bank.