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In this issue ...

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This special issue focuses on the interface between marketing and operations management. Overall, the quality of papers submitted was very high; this indicates that there is a very strong interest in this interdisciplinary area. Twenty-two submissions were received. Six appear in this special issue, and one, by Fangruo Chen, titled "Salesforce and Inventory Management" has already been published in the Spring 2000 issue of *M&SOM*. The articles selected for this special issue cover three areas that we consider to be especially relevant to the intersection of operations management and marketing, i.e., product development, supply chain management, and pricing.

The first article, "The Impact of an Integrated Marketing and Manufacturing Innovation" by G. Schmidt and E. Porteus, explores how a new product impacts an existing product in terms of prices, market segments, and profits. The particular focus is a combination of product innovation and process innovation and how the impact depends on the product's attributes and unit cost.

The model introduced here is a variation of the existing vertically differentiated products model. There are two competing substitute products, and the customers buy, at most, one of them. The paper's contribution is to allow for new relationships between the valuations of the products by potential customers as well as different unit production costs. The authors develop a single numerical measure, called the "degree of product/process innovation," which incorporates the value of both a marketing objective (enhancing product design attributes) and a manufacturing goal (stated in terms of a lowering production costs). They go on to determine the market consequences of introducing the new product and discover that there are two relevant scenarios: "high-end encroachment," in which the product attracts the best customers, and "low-end encroachment," in which the new product attracts fringe or lower-end customers.

The results of this paper are important because they provide useful insights to product-development managers concerning the role of product versus process innovation. A number of competitive strategy questions can be considered. What are the risks faced by an incumbent and by an entrant, and what is the relationship between market share and profit? When should an incumbent consider buying an entrant competitor, even though their product is inferior? The paper also provides guidance for the product-development process in terms of trade-offs between price and performance. The key contribution here is to provide insight into the two types of encroachment that can occur.

The second paper, "An Analysis of Several New Product Performance Metrics" by M. Cohen, J. Eliashberg, and T. Ho, studies a number of metrics commonly employed by product development teams. These include: time-to-market, product performance, and total development cost. Some firms (e.g., pharmaceutical) tend to emphasize primarily a single metric (e.g., product performance) relative to the other metrics. This paper explores the impact of such emphasis on the profitability of the firm.

A dynamic model is first formulated. It captures the product development process of a firm operating in a monopolistic environment. The globally-optimal resource intensity and launch-timing policies are derived without any restrictions imposed on time-to-market, product performance, and development cost. Such constraints are then imposed one at a time, and the implied policies are compared to the nonconstrained policies. The analysis then proceeds to examine two competitive scenarios: implicit competition (where the performance norm in the industry is increasing) and explicit competition (where one firm is a leader and the other is a follower in the industry).

Several insights are obtained demonstrating the appropriateness of and the penalties involved in arbitrarily emphasizing a single metric in the product-development process. The paper also evaluates the performance profitability associated with emphasizing a single metric.

The third article, "Supply Contract Competition and Sourcing Policies," by W. Elmaghraby, provides a comprehensive review of the literature on economics and operations research concerning sourcing strategies employed in competitive procurement environments (with particular emphasis on procurement auctions). The review provides insights into the types of auctions often used in procurement settings, the types of incentives being offered to suppliers, and the impact of these

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incentives on both procurement costs and research and development activities.

The analysis of buyer-supplier relationships is already recognized as a critical issue in supply chain management and is becoming increasingly important in this age of e-commerce. This paper reviews the role of auctions for selecting a supplier from a pool of candidates. It considers issues such as, what type of auction to use in order to minimize acquisition costs and the determination of the optimal number of suppliers. Other issues discussed are the type of contract to sign with the winner of the auction, and what effect the auction format will have on the investment decisions of the chosen supplier.

The fourth paper titled "Channel Dynamics Under Price and Service Competition" by A. Tsay and N. Agrawal analyzes decentralized distribution channels characterized by (two) independent retailers who compete on the basis of both price and "service." Supply comes from a common manufacturer, and the retailers compete in the same market for end customers. The paper explores the impact of the intensity of competition and the degree of cooperation on sales, market share, and profitability.

The paper makes a contribution to the emerging literature in which economic models of operations management issues are considered. The results include insights concerning the role of competitive preferences of each party in the supply chain. It shows that in some cases both retailers will prefer an increase in competitive intensity. The paper also provides results concerning manufacturing wholesale-pricing strategies and, thus, provides insight into the structure of wholesale-pricing mechanisms, and how they contribute to overall system coordination.

This paper is valuable from a managerial perspective because it provides a framework for dealing with strategic decisions that arise at the interface between marketing and operations management, i.e., how to set both price and service levels in a competitive market where consumers are sensitive to both factors. The paper analyzes these issues in a manner that takes the manufacturer's pricing strategy into account while providing insight into competitive supply chain practices.

The fifth article, "Price and Time Competition for Service Delivery" by R. So, considers the situation faced by service firms that use delivery time guarantees to compete for customers. The paper develops a game-theoretic framework to analyze the impact of using such time guarantees in competitive settings.

The paper shows that a Nash equilibrium exists and develops an efficient iterative algorithm to compute the equilibrium solution in an environment where a uniform-service time guarantee is used to compete in a time and price sensitive market. Based on a numerical study, the paper generates several useful managerial insights regarding how different firm and market characteristics would affect the price and delivery time competition in the market.

Firms competing in time and price sensitive markets have to select guarantees for both factors. The paper addresses the question of how delivery time and price would be set differently in a competitive versus a monopolistic market. The paper also considers additional questions of when there are heterogeneous firms in the market. In particular, how would distinctive firm characteristics affect the selection of time and price guarantees to differentiate service? The results indicate that high-capacity firms tend to offer better time guarantees, and firms with lower operating costs offer lower prices. Furthermore, this differentiation becomes more acute as the time sensitivity of market demand increases.

The sixth paper, "Impact of Uncertainty and Risk Aversion on Price and Order Quantity in the Newsvendor Problem" by S. Seshardi and V. Agrawal, focuses on a key question of how the attitude towards risk of retailers will affect their pricing decisions. In many industries there is conflict between the supplier and the retailers in terms of pricing merchandise, i.e., who gets to set the prices and under what conditions should retailers choose to lower their prices to maximize their profit.

This paper develops a single period inventory model where risk-averse retailers face uncertain customer demand as they make purchase quantity and selling price decisions. In this model, demand is stochastic but is a function of the price set by the retailer. The objective of the retailer is to maximize expected utility. The key contribution of the paper involves studying different assumptions concerning the nature of the demand-

price mechanism. In particular, in contrast to a risk-neutral retailer, a risk-averse retailer will either charge a higher price and order less or charge a lower price. When price affects the scale of the demand distribution, the first result is true, and when price affects the location of the distribution, the second result follows.

The issue of price setting in a retail channel has important strategic and legal implications. This paper sheds some light on this controversial issue through the application of a model that yields interesting analytical results and managerial insights.

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