Furthering the science of revenue management

Ian Yeoman[1]

From a historical perspective, the interest in Revenue Management practices started with the pioneering research of Rothstein (1971, 1974) and Littlewood (Littlewood 2005) on airline and hotel overbooking. However, it was probably after the work of Belobaba (1987) and the American Airlines success (Vinod 2016) that the field really took off. The airline industry provided researchers with a concrete example of the tremendous impact that Revenue Management tools can have on the operations of accompany (Bitran and Caldentey 2003). Today, Revenue Management is an analytical process that relies on analytics to help predict customer behaviour and optimize inventory, production and pricing to maximize revenue. In other words, it is about understanding supply and demand trends and identifying what customers value most. This allows businesses to anticipate demand changes and other factors that should be considered when evaluating revenue opportunities. Revenue Management is the ability to anticipate demand and can empower management to make important resource allocation and pricing decisions. Thus, using complex algorithms, business is able to model infinite variables to determine a price against demand and capacity. In this issue, we further this science.

Modelling uncertainty

An uncertain future and fears about the stock-outs will compel customers to stock goods at home, resulting in panic buying. Even though it is a frequently observed consumer behaviour, there is scant literature in dual-channel supply chain (DCSC) which address this demand disruption. This study by Raju et al. (2023) analytically models and analyses the impact of panic buying in a DCSC two-echelon dual-channel supply chain comprising of a manufacturer, brick and mortar store (r-store), and online store (e-store). They concluded that the normal laws of demand does not hold during panic buying disruption, and even essential goods act like Veblen's luxury goods during the period. Prices have a leverage effect on firm profits. Prices, however, have also an impact on customers' perceived price fairness and thus indirectly on firm's bottom line. A growing body of literature shows this. Papers on the level of fair pricing, however, are rather scarce. In the paper by Radic (2023), fairness is considered through cost-based or value-based prices. The results can be used to assess fairness implications of prices ex-ante and hence complement traditional pricing approaches.

Price changes

Fjell and Heywood (2023) examine the myopic price changes based on the inverse elasticity pricing rule for a multiproduct firm. By myopic, we mean ignoring that elasticity likely changes with price and that marginal cost likely changes with quantity. The research concludes the net effects of allowing elasticities, cross-price elasticities, and marginal cost to be non-constant. Iwaji and Sato (2023) propose an optimal pricing model for products with both positive and negative network effects. A closed-form expression of the optimal pricing policy is derived under the assumption that the demand function is linear. When there are two customer types with different attitudes towards congestion, the monotonicity of the optimal price differs according to the price sensitivity of each customer type. The paper shows with a linear demand assumption, the optimal price is affected by the ratio of the number of customer types, not by network effects. The results conclude that in situations where there are many customers who do not prefer congestion, firms can increase profits by setting prices higher only when the amount of congestion does not significantly affect the purchasing decisions of customers who prefer congestion (weak positive network effects).

✉ Ian Yeoman
ian.yeoman@nhlstenden.com

1   Hotel Management School Leeuwarden, NHL Stenden University of Applied Sciences, Leeuwarden, The Netherlands

Supply side perspectives

In Taleizadeh et al. (2023) research, the authors are trying to design a model using incentive policies in a supply chain in which a store can sell either directly or through cash-back websites with the purpose of examining the impact of the use of incentive policies and how these policies apply to the e-shop and other players in supply chain. The research concludes that proper use of motivational policies can attract customers, while increasing the price of the product by creating value. Pricing strategy is vital in the retail sector as prices play an important role in driving revenues and profits. However, few studies have been conducted on retail promotion optimization, particularly amid the COVID-19 situation. Phumchusri et al. (2023) study aims to leverage statistical models to examine the effects of price promotion and other factors on sales during the COVID-19 period. Using a ADL-OWN and ADL-CROSS model, the modelling suggests that demand models which are incorporate into the optimization model with related business constraints, maximize multiperiod profitability. The model suggests a highly robust promotional plan improves profitability.

Organizations (manufacturing, service, healthcare, etc.) buy goods and services for their operational needs from reliable and subject-optimized companies frequently. In fact, procurement processes follow stringent procedures to ensure that the process is fair and efficient with a minimal wastage of resources. The main challenge of all such procurement processes is the selection of optimal bidder(s) such that they satisfy the 'best value for money' criteria rather than accomplishing the 'best optimized price' criteria alone. In fact, choosing an optimal bidder requires, in general, consideration of both technical and financial criteria with appropriate assignment of weightage for each. In the paper by, Ravichandran and Vanishree (2023), an innovative approach is proposed where only an optimal set of shortlisted bidders is made to undergo quality and cost-based selection (QCBS) evaluation procedure.

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