

VORTRAG

Supply Chain Planning in Retailing: Integrated Assortment, Shelf Space and Price Planning in Retailing

Prof. Heinrich Kuhn
(Universität Eichstätt-Ingolstadt)

Mi, 24.04.2013, 16:30 Uhr, HS 9
BWZ Brünner Straße 72
1210 Wien

Abstract:

Matching consumer demand with retail supply capacity is a key lever for increasing efficiency in the retail industry. Consumers are demanding better service levels and prices, while retailers respond with increasing product variety, becoming more price competitive and striving towards higher service levels. Furthermore, retailers are increasingly allocating marketing from out-of-store to in-store activities. These developments have greatly increased pressure on margins and require extremely efficient category management decision support systems. The paper presents a novel model that jointly optimizes assortment, space allocation and prices, viewing category profit as a composite function of price- and space-dependent demand, consumer-driven substitution and price-dependent profit. The contribution of the model lies in integrating pricing decisions and substitution effects with shelf space management. The developed model corresponds to a specialized knapsack problem. The model is implemented in OPL and solved via CPLEX to provide fast and practical solutions. Numerical examples are used to illustrate managerial insights into planning problems. The integrated solutions increase profit significantly (between 6 and 23%) and have a considerable impact on assortment, shelf space assignment and pricing decisions (up to 60% of the items with different decision variables) compared to the standard planning software. Sensitivity analyses are applied to evaluate error boundaries for consumer behavior and managerial decisions.