

基于Vidale-Wolfe模型的多市场广告预算分配决策模型

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A Decision Model for Multi-market Advertising Budget Allocation Based on Vidale-Wolfe Model

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摘要 广告决策问题很长时间以来都是营销经理和学者们关注的热点。随着社会经济发展,越来越多的企业面对多个市场。如何在多个市场、广告总预算固定的状况下,合理分配各个市场广告预算以收到最优广告效果,是一个企业关心的较为重要的问题。经过比较,选择Vidale-Wolfe模型作为广告反应模型,在此基础上建立了多市场广告预算分配决策模型。考虑到一些营销策略对某些市场有特殊销售速率要求,该模型分为无特殊销售速率维持要求的多市场广告预算分配决策模型和有特殊销售速率维持要求的多市场广告预算分配决策模型两类,后者探讨了销售速率变化与达到指定销售速率两种要求下的广告预算最优分配问题,构建了优化模型,提出了模型参数取值与模型求解方法,最后给出了一个算例。

关键词: 多市场 广告预算分配 决策模型 Vidale-Wolfe模型 广告优化

Abstract: Advertising decision problem has been a hotspot concerned by marketing managers and scholars for a long time. More and more enterprises are facing multi-market with the development of society and economy and it becomes a more important problem for enterprises that how to allocate advertising budget to get the best advertising effect in condition of multi-market and fixed total advertising budget. Vidale-Wolfe model is selected as the advertising response model, based on which the decision model for multi-market advertising budget allocation is proposed. As some marketing strategy requires special sales rate demands in some markets. The proposed model consists of two parts: the latter cares about how to keep certain sales rate, while the former does not. The optimization model is constructed. The method to get arguments value and how to solve the model are discussed. An example is given at last.

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- [1] Sethi S P. Dynamic optimal control models in advertising: a survey[J]. SIAM review, 1977, 19(4): 685-725. 
- [2] Little J D C. Aggregate advertising models: The state of the art[J]. Operations Research, 1979, 27(4): 629-667. 
- [3] Feichtinger G, Hartl R F, Sethi S P. Dynamic optimal control models in advertising: recent developments[J]. Management Science, 1994, 40(2): 195-226. 
- [4] Wierenga B. Handbook of Marketing Decision Models[M]//Danaher P J. Advertising Models New York: Springer-Verlag New York Inc, 2008:81-106.

- [5] Vidale M L, Wolfe H B. An operations-research study of sales response to advertising[J]. *Operations Research*, 1957, 5(3): 370-381. 
- [6] Dorfman R, Steiner P O. Optimal advertising and optimal quality[J]. *The American Economic Review*, 1954, 44(5): 826-836.
- [7] Nerlove M, Arrow K J. Optimal advertising policy under dynamic conditions[J]. *Economica*, 1962, 29(114): 129-142. 
- [8] Sethi S P. Deterministic and stochastic optimization of a dynamic advertising model[J]. *Optimal control applications and methods*, 1983, 4(2): 179-184. 
- [9] Sethi S P, Prasad A, He X. Optimal advertising and pricing in a new-product adoption model[J]. *Journal of Optimization Theory & Applications*, 2008, 139(2): 351-360. 
- [10] Freimer M, Horsky D. Periodic advertising pulsing in a competitive market[J]. *Marketing Science*, 2012, 31(4): 637-648. 
- [11] Viscolani B, Zaccour G. Advertising strategies in a differential game with negative competitor's interference[J]. *Journal of Optimization Theory and Applications*, 2009, 140(1): 153-170. 
- [12] Erickson G M. An oligopoly model of dynamic advertising competition[J]. *European Journal of Operational Research*, 2009, 197(1): 374-388. 
- [13] 肖成勇, 王谦. 两层次广告博弈中供应商的一种批发价协调策略[J]. *系统科学与数学*, 2011, 13(11): 1504-1510.
- [14] 吕芹, 霍佳震. 基于制造商和零售商自有品牌竞争的供应链广告决策[J]. *中国管理科学*, 2011, 19(1): 48-54. 浏览
- [15] He Xiuli, Krishnamoorthy A, Prasad A, et al. Retail competition and cooperative advertising[J]. *Operations Research Letters*, 2011, 39(1): 11-16. 
- [16] 闫涛, 闫继涛. 基于自适应免疫算法的网站广告分配优化[J]. *计算机工程与科学*, 2012, 34(1): 183-186.
- [17] Mihiotis A, Tsakiris I. A mathematical programming study of advertising allocation problem[J]. *Applied mathematics and computation*, 2004, 148(2): 373-379. 
- [18] Krishnan T V, Jain D C. Optimal dynamic advertising policy for new products[J]. *Management Science*, 2006, 52(12): 1957-1969. 
- [19] Sriram S, Kalwani M U. Optimal advertising and promotion budgets in dynamic markets with brand equity as a mediating variable[J]. *Management Science*, 2007, 53(1): 46-60. 
- [20] Marinelli C, Savin S. Optimal distributed dynamic advertising[J]. *Journal of Optimization Theory and Applications*, 2008, 137(3): 569-591. 
- [21] Mesak H I, Bari A, Babin B J, et al. Optimum advertising policy over time for subscriber service innovations in the presence of service cost learning and customers' disadoption[J]. *European Journal of Operational Research*, 2011, 211(3): 642-649. 
- [22] Sasieni M W. Optimal advertising expenditure[J]. *Management Science*, 1971, 18(4): 64-72.
- [23] Krishnamoorthy A, Prasad A, Sethi S P. Optimal pricing and advertising in a durable-good duopoly[J]. *European Journal of Operational Research*, 2010, 200(2): 486-497. 
- [24] Dubé J P, Manchanda P. Differences in dynamic brand competition across markets: An empirical analysis[J]. *Marketing Science*, 2005, 24(1): 81-95. 
- [25] Bronnenberg B J, Mahajan V. Unobserved retailer behavior in multimarket data: Joint spatial dependence in market shares and promotion variables[J]. *Marketing Science*, 2001, 20(3): 284-299. 
- [26] Huang Jian, Leng Mingming, Liang Liping. Recent developments in dynamic advertising research[J]. *European Journal of Operational Research*, 2011, 220(3): 591-609.
- [27] Liu Dengpan, Kumar S, Mookerjee V S. Advertising strategies in electronic retailing: A differential games approach[J]. *Information Systems Research*, 2012, 23(3): 903-917. 
- [28] Hochman E, Regev U, Ward R W. Optimal advertising signals in the Florida citrus industry: a research application[J]. *American Journal of Agricultural Economics*, 1974, 56(4): 697-705. 
- [29] Chintagunta P K, Vilcassim N J. An empirical investigation of advertising strategies in a dynamic duopoly[J]. *Management Science*, 1992, 38(9): 1230-1244. 
- [30] Kennedy J, Eberhart R. Particle swarm optimization[C]. *International Conference on Neural Networks*, Perth, Nov 27-Dec 01, 1995, 4: 1942-1948.

- [1] 董毓芬, 何平, 徐晓燕. 时间价格敏感型需求下的二阶段供应链协调模型[J]. *中国管理科学*, 2011, 19(4): 93-97
- [2] 李富昌, 王勇, 张战峰. 考虑第三方物流竞争的第四方物流运输与库存外包决策[J]. *中国管理科学*, 2010, 18(6): 71-81
- [3] 朱磊, 范英, 魏一鸣. 基于实物期权理论的矿产资源最优投资策略模型[J]. *中国管理科学*, 2009, 17(2): 36-41
- [4] 张宇, 于渤. AHP决策模型在怒江流域水电能源开发评价中的应用研究[J]. *中国管理科学*, 2007, 15(4): 124-129
- [5] 王建宇, 樊治平, 姜艳萍, 胡国东. 合作知识创新中基于Stackelberg博弈的资源共享决策模型[J]. *中国管理科学*, 2005, (3): 84-88
- [6] 杨文胜, 李莉. 响应时间不确定下的交货期相关定价研究[J]. *中国管理科学*, 2005, (2): 56-62
- [7] 李寿德, 黄桐城. 初始排污权分配的一个多目标决策模型[J]. *中国管理科学*, 2003, (6): 40-44

[8] 刘思峰, 林益. 美式认购期权最佳执行时间决策[J]. 中国管理科学, 1997,(2): 12-15

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