

# OPTIMAL MARKETING BUDGETING AND BENCHMARKING OF PLATFORM FIRMS

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## ABSTRACT

Platform firms are firms that increase social surplus by (1) catering to distinct groups of customers such that (2) members of at least one group wish to access the other group and (3) facilitating group-access more efficiently than bi-lateral relationships between the members of the groups. Examples include markets of print media companies like newspapers and magazines (readers and advertisers), TV broadcasters (viewers and advertisers), shopping malls (shoppers and retailers), and payment cards (cardholders and merchants). The marketplace today is abundantly populated with such platform firms that operate in ‘*two-sided*’ markets. A platform firm is different from firms operating in ‘one-sided’ classic firm markets because their marketing strategies must take into account the fact that the benefit enjoyed by a member of one group depends upon how well the platform attracts customers from the other group. The marketing literature has largely ignored this aspect to date; hence platform firms remain an under-studied phenomenon in our field.

This dissertation deals with two fundamental responsibilities of marketing managers; a) setting marketing budgets optimally and b) benchmarking the performance of individual decision making units (DMUs). In two essays, this dissertation advances knowledge with respect to optimal marketing budgeting by platform firms (Chapter 2) and benchmarking of platform DMUs (Chapter 3).

The first essay (Chapter 2) makes three contributions. We note that sales-response models in the platform-firm context must capture the notion that the benefit enjoyed by a member of one group depends upon how well the platform firm attracts members from another group, i.e., the extent of cross-market effects (CMEs). CMEs are absent in “one-sided” markets. The first contribution of the essay is a demonstration of how CMEs theoretically impact optimal investment levels and allocation ratios, extending and even reversing the extant normative budgeting rules obtained from models that ignore CMEs. The second, contribution lies in empirical demonstration of CMEs and showing how they affect the evaluation of marketing elasticity in a real-world setting. The third contribution is the development of a tool that allows a platform manager to set budgets optimally for any planning horizon by taking CMEs into account.

The second essay (Chapter 3) is focused on media-based platform firms and makes two contributions. We note that productivity benchmarking involves the study of which DMU is more efficient in converting inputs into outputs. Benchmarking media-platform DMUs poses some methodological challenges by virtue of their business model. For instance, the outputs of some platform-firms are inherently *networked* since the outputs of some departments may serve as inputs to the other and vice versa. A survey of the literature suggests that none of the current benchmarking approaches account for all of the media-platform’s benchmarking challenges simultaneously. The first contribution of this essay (Chapter 3) is to combine relatively new techniques in the operations research and statistics literatures to develop a new procedure to benchmark media-platforms that addresses the challenges. The second contribution of the essay lies in empirical demonstration/validation of the approach via an application to U.S. print

newspaper firms. While doing so, the essay also demonstrates how the developed approach outperforms applications of the existing approaches.

Thus, this dissertation offers insights into how to approach marketing budgeting and benchmarking decisions differently as platform-firm managers.