Performance-based Advertising: Price and Advertising as Signals of Product Quality

Juan Feng and Jinhong Xie*
University of Florida

Abstract

Performance-based advertising is becoming increasingly popular in the online advertising industry, where the advertiser pays the publisher only when an “action” (e.g., a click-through or a purchase) is generated by the advertisement. In this paper, we ask and answer two important questions: (1) Can this emerging advertising scheme perform one of the fundamental functions of advertising—signaling product quality?, and (2) Compared with traditional impression-based advertising, what is the impact of performance-based advertising on advertisers’ signaling behavior and publishers’ advertising revenue?

We argue that, unlike traditional impression-based advertising, total advertising expenditure under performance-based advertising is determined by the total amount of actions generated by consumers, rather than by total advertising exposure (e.g., air time on TV or number of lines in newspapers), and thus is not directly observable by the viewer of the advertisement. Our model shows that, regardless of its popularity, performance-based advertising may fail to signal product quality. We present a formal model to derive conditions required for advertising to signal product quality under this newly developed advertising scheme. We find that, the publisher can enable the signaling function by communicating the merchant’s per-unit advertising expenditure so that consumers can distinguish a higher-paying firm from a lower-paying one. We discuss some possible mechanisms to convey this information.

Our analysis also reveals that two critical factors significantly affect the signaling function of performance-based advertising: (1) The demand uncertainty factor, which measures advertisers’ uncertainty about their potential market, and (2) the advertising performance over-measure factor, which describes the extent to which product performance accounts for advertising performance. We find that the uncertainty factor facilitates, but the over-measure factor impedes (or even destroys) the signaling function of performance-based advertising. Specifically, our results show that, in the presence of the over-measure factor, switching from impression-based to performance-based advertising (a) reduces the number of situations in which advertising can be used to signal quality, (b) increases the prices charged to consumers, (c) increases the expected advertising expenditure if the cost differentiation between the high- and low-quality firms is sufficiently high, but decreases the expected advertising expenditure otherwise, and (d) increases the advertiser’s profit if the over-measure factor is low but the uncertainty factor is high, and decreases the profit otherwise.