

Title

Competition and Yield Optimization in Online Display Advertising Exchanges

Abstract

Ad Exchanges are emerging Internet markets where advertisers may purchase display ad placements, in real-time and based on specific viewer information, directly from publishers via a simple auction mechanism. This is a new channel through which publishers may sell impressions, alongside the more traditional channel of reservation-based ad contracts. Typically, advertisers join these exchanges with a pre-specified budget and participate in multiple second-price auctions over the length of a campaign. In this talk we focus on the competitive landscape that arises in Ad Exchanges and the implications for the publishers' yield optimization problem. Our first main contribution is to introduce the novel notion of a Fluid Mean Field Equilibrium (FMFE) that is behaviorally appealing, computationally tractable, and in some important cases yields a closed-form characterization. Our second main contribution is to use this framework to provide sharp prescriptions for the key levers that publishers face in these markets, such as the reserve price, the allocation of impressions to the exchange versus an alternative channel, and the disclosure of viewers' information. This is joint work with Prof. Omar Besbes and Prof. Gabriel Weintraub from Columbia Business School.

Time permitting; I shall briefly discuss my previous research on how to optimize the ad inventory allocation decisions of a publisher who manages a portfolio of guaranteed contracts in the presence of an Ad Exchange.

BIO

Santiago Balseiro is a Ph.D. candidate in the Decision, Risk and Operations division at Columbia Business School. His research focuses on optimization, stochastic modeling and game theory with applications in revenue management, service operations and digital markets. More recently, he is interested in studying the design and operation of online display advertising exchanges.