Matching Platforms

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October 18, 2019

Abstract

A platform matches agents on two sides of a market to create a trading opportunity between them. The agents subscribe to the platform by paying subscription fees which are contingent on their reported private types, and then engage in strategic interactions with their matched partner(s). A *matching mechanism* of the platform consists of the subscription fees as well as the *matching rule* which specifies the probability distribution of the type profile of the matched agents. We characterize optimal matching mechanisms which induce truthful reporting from the agents and maximize the subscription revenue. We show that the optimal mechanisms for a one-to-one trading platform match a higher buyer type with a higher seller type weakly more often and vice versa, but do not necessarily entail assortative matching even when the underlying match values are supermodular. We then study an auction platform that matches each seller to two agents, and show that the optimal mechanism entails the combination of negative and positive assortative matching.

Key words: assortative, random, auction, subscription, revenue maximization, complementarity.

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