

*The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar*

Competition between Two-Sided Platforms under Demand and Supply Congestion Effects

by

Prof. Fernando G. BERNSTEIN
Bob J. White Professor of Operations Management
The Fuqua School of Business
Duke University

Date: 28 September 2018 (Friday)
Time: 10:30am - 11:30am
Venue: R602, Shirley Chan Building
The Hong Kong Polytechnic University

(Conducted in English)

Abstract:

This paper explores the impact of competition in the sharing economy. Examples include the cases of Uber and Lyft in the context of ride-sharing platforms. In particular, we consider competition between two platforms that offer a common service (e.g., rides) through a set of independent suppliers to a market of customers. Each platform sets a price that is charged to customers for purchasing a service instance provided by a supplier. A share of that price minus a commission is paid to the supplier that delivers the service. Both customers' and suppliers' utilities are sensitive to the payment terms set by the platform and are also sensitive to congestion in the system. We consider two possible scenarios. The first one, termed "single-homing," assumes that suppliers work through a single platform. In the second scenario, termed "multi-homing" (or "multi-apping" as it is known in practice), suppliers deliver service through both platforms. In these contexts, we explore the equilibrium prices that emerge from the competitive interaction between the platforms. In particular, we study the impact of surge pricing on the platform, customers, and drivers. We also examine the incentives at play when individual drivers can choose to engage in multi-homing. We compare the platforms', drivers', and customers' performance when all drivers either single-home or all multi-home. We find that, while individual drivers may have the incentive to multi-home, all players are worse off when all drivers multi-home.

Bio:

Fernando Bernstein is the Bob J. White Professor of Operations Management at the Fuqua School of Business, Duke University. He obtained a Ph.D. in Operations Management from the Graduate School of Business at Columbia University and joined Duke University in July 2000. Prof. Bernstein's research interests include retail operations, supply chain management, production planning and inventory control, applications of game theory for production and distribution systems, and revenue management. Prof. Bernstein has published papers in leading journals such as *Operations Research*, *Management Science* and *Manufacturing and Service Operations Management*. He also serves as Associate Editor for these three journals. Prof. Bernstein teaches the core Operations Management course for the Weekend, Global, and Cross-Continent Executive MBA programs at Duke University, in addition to various Executive Education courses on operations management and health care operations. He has earned the Excellence in Teaching Award for a core course for his teaching at Duke.

Please email to clare.lau@polyu.edu.hk for enquiries.

All are welcome!