

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

**JD Operates Through Chinese New Year – Will This Be Tmall's Waterloo?**

by

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**Date: 27 August 2019 (Tuesday)**  
**Time: 02:30pm - 03:30pm**  
**Venue: R401, Shirley Chan Building**  
**The Hong Kong Polytechnic University**

**(Conducted in English)**

**Abstract:**

In this paper, we study a two-period competition between Tmall and JD, the two giant Chinese online retailers, when the market is composed of two types of customers, strategic and myopic ones. We aim to examine how JD's operating through Chinese New Year (CNY) policy affects Tmall, with a focus on categories of products in holiday seasons during before-CNY and in-CNY periods. We consider the situation wherein JD can provide logistics services during CNY (due to its self-managed logistics system) while Tmall cannot. Interestingly, we find that, under certain conditions, JD's operations-through-CNY strategy affects Tmall's profit in a way that highly hinges upon the composition of customer types in the market as well as the ratio of their willingness-to-pay (valuations) during before-CNY and in-CNY periods. The underlying reason is that, to obtain more profits, JD may set a relatively high price before CNY to push some of the strategic customers to buy in CNY due to their increased valuations during the period. This pricing strategy softens the competition before CNY and may benefit Tmall under certain conditions. To examine the profitability of different items of Tmall, we then propose a framework to estimate involved parameters of the model settings using open datasets. In the first step, we train a unique pageview (UV) forecasting model for each selected product via Extreme Gradient Boosting (XGBoost), a decision-tree-based machine learning model, and use it to estimate the corresponding parameters. In the second step, by combining the estimated parameters with results in our game-theoretic analysis, we estimate the willingness-to-pay of the customers in the two periods. In the third step, we conduct several numerical experiments to check the profitability of items of Tmall in different categories when JD operates in CNY with these estimated parameters. The data analysis results demonstrate that the operations-through-CNY strategy of JD can be a bright side for Tmall in certain product categories/items but a dark side in other categories/items.

**Bio:**

Shifu XU received a bachelor degree in Information Management and Information Systems from Wuhan University of Technology in 2014, and a master degree in Management Science and Engineering from Huazhong University of Science and Technology in 2017. He is currently pursuing his Doctor of Philosophy under the supervision of Prof. Zhou XU in The Hong Kong Polytechnic University.

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**All are welcome!**