

The Hong Kong University of Science and Technology
Dept of Information Systems, Business Statistics
and Operations Management
Frontiers in Operations Management Workshop



**Information Sharing and Financing Services on
Online Retailing Platforms**

by

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Time : **9:30 – 10:15 AM**
Venue : **Room G012, LSK Business Building, HKUST**



Abstract:

This paper considers integrated information-sharing and financing services for a retail platform on which sellers sell products. Online marketplaces such as Amazon and Tmall have been expanding services to boost the growth of their ecosystems. One is information service on sharing privately gathered massive consumer data that is not available to their sellers, and the other is financing service, e.g., Amazon Lending and Ant Financial, aiming to provide accessible and cheap financial support for small and medium sized sellers. We develop a game-theoretical model to examine the impacts of financing on the platform's information-sharing strategy when sellers are financially constrained. The platform charges a commission fee for each transaction and determines how to share the privately observed demand information which may be contingent on seller's financing choice. The platform and bank then simultaneously set the loan interest rates, followed by the seller's selection of loan provider and production quantity. We characterize the equilibrium finance-operations and the optimal information-sharing strategy for the platform. We find that although the seller selects loan provider based on relative financing cost under exogenously given interest rates, she always selects the platform financing under equilibrium. The platform should always share information, but may make it contingent on his financing service which causes double-marginalization in the capital market and hurts supply chain efficiency. We show that such inefficiency could be resolved by charging a fixed-payment for the information-sharing service which leads to a 'win-win' outcome. We also examine the impacts of the capital market composition and extend these analytical results and managerial insights to general settings to ensure the robustness. Our findings could provide useful guidance for platform practitioners to design integrated services on the financing and information provision.

Bio:

Prof Lu is an Assistant Professor at HKUST School of Business and Management. His primary research interests are in the area of data-driven decision-making with a focus on applications in e-commerce, pricing and revenue management, supply chain management, healthcare and service systems. His work has been awarded the Finalist of INFORMS George Nicholson Student Paper Competition, and appeared in world leading OM journals such as Management Science, Manufacturing & Service Operations Management, Mathematics of Operations Research. Prior to joining HKUST Business School, Prof Lu spent few years in industry where he took data-driven approaches solving practical problems arising from financing, e-commerce and online display advertising.

All interested are welcome!

Enquiries: Dept of ISOM