The Hong Kong University of Science and Technology

Dept of Information Systems, Business Statistics
and Operations Management
Dept of Industrial Engineering & Decision Analytics
Joint Seminar Announcement

'Now or Later?': When to Deploy Qualification Screening in Open-Bid Auction for Re-Sourcing

by

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Date   :   **13 August 2021 (Friday)**
Time   :   **4:00 - 5:15 PM**
Zoom ID   :   **941 1769 1148 (passcode 607141)**

Abstract: This paper considers a re-sourcing setting in which a qualified supplier (the incumbent) and multiple suppliers which have not yet been qualified (the entrants) compete in an open-bid descending auction for a single-supplier contract. Due to the risk of supplier nonperformance, the buyer only awards the contract to a qualified supplier; meanwhile, the buyer can conduct supplier qualification screening at a cost, to verify whether the entrant suppliers can perform the contract. Conventionally, the buyer would screen entrants before running an auction, i.e., the pre-qualification strategy (PRE). We explore an alternative approach called post-qualification strategy (POST), in which the buyer first runs an auction and then conducts qualification screenings based on the suppliers' auction bids. Our characterization of the dynamic structure of the suppliers' equilibrium bidding strategy enables the calculation of the buyer's expected cost under POST, which is computationally intractable without this characterization. We derive analytical conditions under which POST is cheaper than PRE, and also use a comprehensive numerical study to quantify the benefit of POST. We find that using the cheaper option between PRE and POST not only provides significant cost-savings over the conventional PRE-only approach but also captures the majority of the benefit an optimal mechanism can offer over PRE. Our results highlight the practical benefit of POST.

Bio: Dr Qi Chen, George is an Assistant Professor of Management Science and Operations at London Business School. He earned his doctoral degree from the Stephen M. Ross School of Business at the University of Michigan, and his bachelor degree from the Department of Automation at Tsinghua University. Prior to joining LBS, Dr Chen has taught at the University of Texas at Dallas. His primary research interests include revenue management and pricing, supply chain management and strategic sourcing, and online marketplaces.

All interested are welcome!
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