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| Operations Management and Statistics  **In Person** **Seminar - LL 1020** & hybrid online via MS Teams\*  **Fri., Mar. 17, 2023 @ 2:00 pm** |
| **How to Value Customer Transactions in Dynamic Pricing Situations?**  Anton Ovchinnikov, Distinguished Professor of Management Analytics  Smith School of Business, Queens University  *All students and faculty welcome.*  ***\*Held in LL 1020 -*** *Hybrid portion hosted in* ***MS Teams*** *–* [*Click here to join the meeting*](https://teams.microsoft.com/l/meetup-join/19%3a9e1bc373e7134fd38f6c04608201b7de%40thread.tacv2/1675292334537?context=%7b%22Tid%22%3a%2278aac226-2f03-4b4d-9037-b46d56c55210%22%2c%22Oid%22%3a%227a3454cf-31a5-4115-a675-2a342cd1bcd8%22%7d)***.*** |

**Abstract |** Problem definition: We study how to calculate the value, or profit, gained from a specific customer transaction in dynamic pricing situations with limited capacity. A popular cash-flow-based approach suggests that “profit=revenue-cost” but we show that it leads to a systematic bias, overvaluing high-price transactions and undervaluing low-price ones. We then present an intuitive refined approach to valuing customer transactions that corrects this bias. Methodology/results: Using the seminal dynamic pricing model of Gallego and van Ryzin (1994), we evaluate the difference between the firm’s profit with and without a specific customer transaction – the value of an incremental customer transaction (VICT). Under the cash-flow-based approach, the value, or profit, increases in the price paid. We, however, show that a lower-priced transaction could have a higher VICT, that the expected VICT could be independent of, or even decrease in, the price paid. We prove that this depends on the elasticity properties of the demand function used by the firm’s dynamic pricing algorithms and more broadly, on how the shadow price on capacity changes over time. Building on that, we also show that certain non-stationary customer arrival patterns could restore the “intuitive” directional relationship that higher-priced transactions are more valuable. Managerial implications: Our results have both short-term/operational and long-term/strategic implications. Operationally, because VICT reflects the value gained from a customer transaction, or, equivalently, the value lost if the transaction did not happen, VICT represents the maximum amount the firm is willing to spend on securing the transaction. Strategically, our results suggest that firms could encourage transactions at lower prices (yet at even lower shadow prices) as those generally bring more value. *Authors: Anton Ovchinnikov and Jue Wang (Smith School of Business, Queen’s University, Canada).*

**Bio |** Anton Ovchinnikov is a Distinguished Professor of Management Analytics at Smith School of Business in Kingston, Canada. His research interests include, on the theoretical side, behavioral operations, revenue management and environmental sustainability. On the applied side, he studies data-driven applications in business, government and nonprofit sectors. Anton’s work has been published in the leading academic journals. One of his academic papers was recognized as the finalist of the 2009 Junior Faculty Best Paper Competition held by the Institute of Operations Research and Management Sciences (INFORMS), and his applied work was recognized as the finalist in the 2014 INFORMS Revenue Management and Pricing section Practice Prize. In 2015 Anton received the Paul Kleindorfer Award in Sustainability from the Production and Operations Management Society (POMS) for his work on sustainable operations. His case studies also won several awards, including the 2005 and 2011 INFORMS Case competitions. Anton organized several conferences and is on the editorial review boards of two leading operations management journals; his contributions to the academic community also received multiple service awards.

**Note:***OM&S PhD students are reminded to stay in attendance for the full duration of the seminar.*

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