2019 NBER Economics of Digitization Tutorial
Application Material

GRACE GU

Doctoral Candidate | Technology & Operations Management

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Coursework Summary

I am a fifth year doctoral candidate in the Technology and Operations Management Unit at Harvard Business School. My research focuses on digitization and technology strategies, especially in the context of online two-sided marketplaces.

I have completed all the coursework requirements, qualification exams, and the dissertation proposal defense. My coursework includes both a methodological part and a literature part. In terms of methodology, my training emphasizes causal inference and advanced statistical analysis as my main analytical technique toolkits. These techniques are covered in courses including Methods for Causal Inference in Management Research (Timothy Simcoe), Advanced Statistics and Econometrics (Gary King), Industrial Organization (Glenn Ellison), and Advanced Quantitative Methodology (Matthew Blackwell). For the literature part, I obtain comprehensive understanding of the digitization and innovation literature from survey courses including Empirical Studies of Innovation and Digitization (Shane Greenstein, Karim Lakhani), Macro Topics in Organizational Behavior (Michael Tushman), and Foundations of Strategy (Juan Alcacer).

Dissertation Short Description

I have defended my dissertation proposal in September 2017, with an expected date of completion of May, 2020. My current dissertation committee members are Prof. Shane Greenstein, Prof. Marco Iansiti, and Prof. Feng Zhu.

My proposed dissertation examines how value creation of an online marketplace hinders its value capture due to disintermediation. As the quality of matching becomes sufficiently high when the intermediary improves technology or user trust between the two sides of its market, it is unclear whether it is always optimal for the platforms' overall value capture. I plan to investigate the relationship between technology, user trust, and disintermediation by leveraging both a natural shock and a randomized control trial on a major online freelance marketplace. I will also identify heterogeneity across users in their tendencies to disintermediate. My proposed dissertation would be among the first to empirically examine user disintermediation on digital markets, and provide novel evidence on understanding the value of intermediaries in general.

General Research Interests

More broadly, my research interests lie at the intersection of digitization and innovation, particularly empirical research in high-technology industries such as the IT industry and online platforms. I seek to understand the role of digitization in technological innovation from two perspectives: the user's perspective and the firm's perspective.

From the user's perspective, I study user participation in digital platforms and how the platforms in turn shape users' behavior. For example,

in a recent working paper [1] my coauthors and I investigate how user participation on Wikipedia changes the users' political biases and slant over time. We use text analysis on large scale user-generated content to measure the slant of users' contributions, and found that users have a tendency to edit articles with the opposite slant, during which the slant of their own contributions also becomes more neutral.

From the firm's perspective, I study the role of digitization in improving firms' ability of technological innovation. To be specific, in a project that investigates the role of data in digital companies, we process large scale transaction data to understand how digital platforms can outperform its competitors due to its online service quality improvement. I am also working on another project that involves randomized experiment as the main research design, during which I will work with an online platform company to conduct field experiments.

I am excited about the opportunity to participate in the 2019 NBER Digitization Tutorial. My coursework and research experiences equip me with the knowledge needed and I hope to contribute my thoughts to the discussions. Moreover, I am sure the talks and others' comments will greatly benefit my dissertation at this stage as well.

Thank you for your time and kind consideration. I look forward to hearing from you.

Sincerely,

Yuan (Grace) Gu

[1] Greenstein, S., Gu, G., & Zhu, F. (2018). *Ideological Segregation among Online Collaborators: Evidence from Wikipedians (No. w22744).* National Bureau of Economic Research.