2019 NBER Economics of Digitization Tutorial Application

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Coursework Summary

I am a third year doctoral candidate in the Technology and Operations Management Unit at Harvard Business School. Over the course of study, I have been obtaining a comprehensive understanding of the digitization and innovation literature from seminar courses including Empirical Studies of Innovation and Digitization (Shane Greenstein), Economics of Information Technology (Erik Brynjolfsson, Sinan Aral), Foundations of Strategy (Juan Alcacer), etc. In terms of methodology, my training is largely focusing on empirical research methods, such as causal inference and advanced statistical analysis. The empirical techniques are covered in courses including Advanced Statistics and Econometrics (Daniel Hidalgo), Applied Econometrics (Josh Angrist), Advanced Quantitative Methodology (Matthew Blackwell), etc. Other courses that have helped to complement my research include Experimental Economics (Benjamin Enke), Market Design (Scott Kominers), etc.

Research Interests Description

My research interests firmly lie in the economics of digitization agenda, with a focus on empirical research in high-technology industries such as the IT industry and online platforms. On the microeconomic side of digitization, I am interested in the effects of digitization on firm performance. In an ongoing project, my coauthors and I investigate how platforms can develop their ecosystem of complements. We use textual analysis of source code from GitHub to examine developer adoption of APIs and SDKs after attending hackathons. We examine how this effect is driven by subsidies and shifts in the expectations about the platform on the complementor-side. In another

project, I use internal communication data across several different types of media from an MNC to examine how digitization affects collaboration within a firm. We also examine how these communication patterns impacts the distribution of innovation within the firm. On the macroeconomics side of digitization, I am interested in the implications of the digital divide. For example, one project that I am currently working on with Shane Greenstein is to better understand the puzzling geography of data centers. We ask: why do many data centers choose to locate in expensive real estate in downtown urban areas when they require minimal labor inputs and provide minimal performance improvements compared to more distant, cheaper alternatives? Finally, in a recently published paper in the *Academy of Management Annals*, my co-authors and I explore new trends in digitization that can lead to changes in how entrepreneurs mobilize resources for their ventures.

I am excited about the opportunity to participate in the 2019 NBER Digitization Tutorial. My coursework and research experiences equip me with the basic preparation for the tutorial, and I believe this opportunity would improve my empirical analysis skills and to engage with a community whose research interests coincides exactly with my own.

Sincerely,
Tommy Pan Fang