

Application for NBER Digitalization Tutorial

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I am a third year doctoral student in the Business Economics Program in Harvard University. I am interested in the intersection of Industrial Organization and Economics of digitalization. For coursework, I have taken graduate-level courses in industrial organization with Ariel Pakes, online economy with Ben Edelman and a strategy course with Andrei Hagiu. Ariel Pakes and Feng Zhu (HBS) supervised my qualifying exam in the field of Industrial Organization and Economics of Information Technology.

One of my current research projects (with Andrei Hagiu) uses a theory model to look at how an exogenous market expansion affects an oligopolistic market. The motivation comes from the dominance of platforms in our digital world. As a platform gains more users, the third-party vendors on the platform experiences an exogenous market expansion. For example, many forms of operating systems (iOS and Android for smartphone and tablet, Windows for computers and Xbox for game consoles) support the distribution of third-party apps; As more consumers adopt the platform (say, more consumers buy smartphones as network improves and costs decreases), there is an exogenous market expansion for each vertical within the App market: productivity apps, utility apps and others. Another example concerns the proof of concept: For example, when public cloud was first available, enterprises had doubts about the feasibility, security and reliability about public cloud. As time passes, public cloud gained wider and wider acceptance. This industry-wide positive spillover attracts more potential buyers to this market, which can be considered an exogenous market expansion for the suppliers in this market. There is a key difference in these two examples. In the smartphone case, it is likely that the newcomers to the market are more price sensitive; while for public cloud, the latecomers tend to be larger, more conservative, but less price-sensitive corporations. This difference could lead to drastically distinct outcomes for the firms. Our model shows that, counter to our intuition, an exogenous market expansion could mean lower profits for all players in the market, such as app developers for iOS. In some sense, an exogenous market expansion plunges all players into a "prisoners' dilemma".

Additionally, I am studying the market for e-books. The growing adoption of this technology has brought two fundamental changes to the industry. On one hand, e-books allow publishers to circumvent the limits imposed on copyright protection---by structuring all sales as "licensing", publishers made ownership impossible for e-books, hence the First Sale Doctrine obsolete. On

the other hand, the technology increases author's bargaining power by making it easier (possible) to self-publish and distribute books. The goal is to understand these two aspects of the technology: how this removal of limits on copyright protection harms consumers in the form of abridged second-hand market; quantify the change in author's bargaining power, and if this increasing bargaining power translates to more creative work, partially offsetting the harm to consumer welfare.

I am thrilled to apply economic tools to understand the digital world better. The NBER digitalization tutorial provides a precious opportunities to learn from the research leaders and to exchange ideas with peers with similar research interests. Thank you for your time and consideration.