NBER Digitization Tutorial 2015 Application

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I am currently in the third year of an Economics PhD program at the University of Toronto, with an expected graduation year of 2017. As part of this program I completed two years of coursework in microeconomics, macroeconomics and econometrics, as well as field specialization in the theory and empirics of Industrial Organization. I passed the Industrial Organization comprehensive exam with distinction. My major field is Industrial Organization, and my other fields are applied econometrics and microeconomics.

Very broadly, I am interested in firm competition, innovation, and strategy. My most recent paper in progress looks at the impact of deregulation in the alcohol retail market using a new dataset from the Ontario wine retail market. I use estimates from a structural demand model to compare outcomes (sales and product variety) between the existing triopoly market and a counterfactual monopoly market.

I am also very interested in online markets - with a particular focus on online stores selling software for mobile and other devices such as the Apple and Google "app stores" - and I plan to pursue a research project in this area.

App stores are a relatively recent phenomenon, but since they provide software (apps) for the now ubiquitous smartphones, they generate very large and growing revenues (10 billion USD in 2013 for the Apple app store). Moreover, hardware manufacturers such as Google and Apple increasingly encourage their computer users to purchase software via similar app stores. This means that the market framework and mechanisms of the app store now apply not only to mobile software, but to computer software in general.

Since the app stores are new, there is relatively little research on them in the literature. There are some marketing and economics studies, but with a few exceptions looking at demand for apps (Carare, 2012; Ghose and Han, 2014), they mostly relate to platform competition. That is, they consider competition between different app ecosystems - the competition between Apple, Google, and Microsoft (e.g. Bresnahan et al., 2013). As far as I am aware, there has been very little analysis done on firm strategies within an app store, especially in terms of entry or innovation incentives for app developers.

In particular, there is some evidence of high developer concentration in the app markets - that is, large developers increasing their market share at the expense of smaller developers. Some of this may have to do with marketing costs, which have been increasing (anecdotally). However, some of this increasing concentration may have to do with the structure of the market. In particular, in the Apple and Google app stores, it is easiest for consumers to search apps by their "rank," which depends on their previous sales. Addition-

ally, while there is a small possibility that the app stores will prominently "feature" apps by small or unknown developers (increasing consumer exposure and sales to these apps), in general the stores are designed to facilitate consumer access to apps by developers who have had previous successes. This possibly means that the structure of the market creates low incentives for new developers (firms) to enter the market and to produce high quality products. Moreover, it may also create low incentives for established successful developers to produce high quality products.

To empirically examine some of these issues, I am currently collecting a comprehensive daily dataset on the Apple app store, detailing the prices of apps, some of their other characteristics (including who the developers are), and their ranks within product categories.

My proposed study is at the intersection of several literatures. It relates to network economics, since there is clearly persistence in sales and rankings that is built into the market. Furthermore, it relates to the theoretical and empirical search literature, and particularly to studies examining ordered search markets (e.g. Arbatskaya, 2007; Armstrong et al., 2009; Koulayev, 2014). However, most of that literature is static, whereas my analysis should be dynamic as firm decisions have dynamic implications regarding their future position in the market.

In summary, my proposed research will shed light on firm strategy and incentives to innovation in mobile app markets, which has important implications for future welfare in this market as well as in the market for computer software. I believe that attending the 2015 NBER Digitization Tutorial would substantially benefit me by exposing me to the most recent research in an area I am very interested in, as well as discussing and improving my own research ideas in the field with leading experts and other interested students.

References

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