Supplement To Platform Economics: The Economics of Multi-Sided Businesses

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I've written the following articles on multi-sided platforms since the publication of Platform Economics: Essays on Multi-Sided Businesses in December 2011. Hopefully, you'll find them useful.

The first article, the "Antitrust Analysis of Multi-Sided Platforms," provides a survey of the literature on multi-sided platforms that is relevant to competition policy through the end of 2012. The second article, "The Consensus Among Economists on Multi-Sided Platforms," argues that courts and competition authorities should reject economic "evidence" that ignores the widely accepted teachings of the multi-sided literature. The other three articles cover different aspects of multi-sided platforms. "Governing Bad Behavior" is about the use of rules and regulations by platforms to govern their communities. "Economics of Vertical Restraints for Multi-Sided Platforms" examines the pro-competitive and anti-competitive explanations for vertical restraints for platforms. "Attention Rivalry Among On Line Platforms" shows how seemingly different online platforms compete for harvesting consumer attention and selling this to advertisers.

"The Antitrust Analysis of Multi-Sided Platform Businesses." Roger Blair and Daniel Sokol, eds., Oxford Handbook on International Antitrust Economics, Oxford University Press, Forthcoming; University of Chicago Institute for Law & Economics Olin Research Paper No. 623. (With Richard Schmalensee.)

This Chapter provides a survey of the economics literature on multi-sided platforms with particular focus on competition policy issues, including market definition, mergers, monopolization, and coordinated behavior. It provides a survey of the general industrial organization theory of multi-sided platforms and then considers various issues concerning the application of antitrust analysis to multi-sided platform businesses. It shows that it is not possible to know whether standard economic models, often relied on for antitrust analysis, apply to multi-sided platforms without explicitly considering the existence of multiple customer groups with interdependent demand. It summarizes many theoretical and empirical papers that demonstrate that a number of results for single-sided firms, which are the focus of much of the applied antitrust economics literature, do not apply directly to multi-sided platforms.

The Consensus Among Economists on Multisided Platforms and Its Implications for Excluding Evidence That Ignores It (April 13, 2013), *CPI Antitrust Chronicles*, June 2013.

There is now a professional consensus among economists that multisided platforms are the main form of business organization in many industries; that these platforms face interdependent demand from multiple groups of customers; and that profit-maximization in the face of this interdependent demand can in theory, and often does in practice, result in their charging a price to one group of customers that is less than marginal cost including zero or less than zero. Traditional economic models that do not consider interdependent demand do not yield reliable results for platform businesses. Many of the economic tools used in antitrust, including the various back-of-the-envelope tools such as critical loss

analysis, are not reliable when applied to multisided platforms. In conducting reliable economic analysis of multisided platforms economists must either explicitly consider interdependent demand in their models or assess biases resulting from traditional tools to verify that they do not alter conclusions.

"Governing Bad Behavior by Users of Multi-Sided Platforms" (November 5, 2012). *Berkeley Technology Law Journal*, Vol 2, Issue 27, Fall 2012; University of Chicago Institute for Law & Economics Olin Research Paper No. 582.

Multi-sided platforms such as exchanges, search engines, social networks and software platforms create value by assembling and serving communities of people and businesses. They generally come into being to solve a transaction problem that prevents agents from getting together to exchange value. An essential feature of these platforms is that they promote positive externalities between members of the community. But as with any community, there are numerous opportunities for people and businesses to create negative externalities, or engage in other bad behavior, that can reduce economic efficiency and, in the extreme, lead to the tragedy of the commons. Multi-sided platforms, acting selfishly to maximize their own profits, often develop governance mechanisms to reduce harmful behavior. They also often develop rules to manage many of the same kinds of problems that beset communities subject to public laws and regulations. They enforce these rules through the exercise of property rights and, most importantly, through the bouncer's right to exclude agents from some quantum of the platform including prohibiting them from the platform entirely. Private control is likely to be more efficient than social control in dealing with negative externalities on platform communities because the platform owner can monitor bad behavior more closely and deal with this behavior more expeditiously than a public regulator. The courts and antitrust authorities should exercise caution in finding anticompetitive exclusion when that exclusion is conducted as part of a governance mechanism for dealing with bad behavior of some platform users that harm other users

"Attention Rivalry Among Online Platforms" (April 12, 2013). *Journal of Competition Law and* Economics, June 2013. University of Chicago Institute for Law & Economics Olin Research Paper No. 627.

Many online businesses, including most of the largest platforms, seek and provide attention. These online attention rivals provide products and features to obtain the attention of consumers and sell some of that attention, through other products and services, to merchants, developers and others who value it. The multi-sided business of seeking and providing attention is fluid with rivalries crossing boundaries defined by the features of the products and services. It is also dynamic. Rivals introduce new products and services, some involving drastic innovation, frequently. Online attention rivals impose competitive constraints on each other. Product differentiation tempers the significance of these constraints in particular situations. But the relevant differentiation mainly involves aspects of the attention that is procured and sold rather than, necessarily, particular features of the products and services used for acquiring and delivering that attention.

Antitrust analysis should consider these competitive constraints in evaluating market definition, market power, and the potential for anticompetitive effects. Most importantly, antitrust analysis should focus on competition for seeking and providing attention rather than the particular products and services used for securing and delivering this attention. The existence of competition among attention rivals does not imply that antitrust should reduce the vigor with which it examines mergers and exclusionary practices among these platforms. It just needs to look for problems in the right places.

"Economics of Vertical Restraints for Multi-Sided Platforms" (December 2012). *Competition Policy International*, Spring 2013. University of Chicago Institute for Law & Economics Olin Research Paper No. 626.

This paper presents an overview of what economists can say about vertical constraints by multi-sided platforms at this stage in the development of our knowledge about the economics of these businesses. It describes the general procompetitive and anticompetitive uses of vertical restraints by multi-sided platforms. It then focuses on the role of critical mass for multi-sided platforms and how vertical restraints might be used on the one hand, anti-competitively to prevent rivals from achieving critical mass and long-term growth and, on the other hand, pro-competitively, to ensure the platform and its customers that the platform will remain viable.