

Evans, D. S., A. Hagiu and R. Schmalensee, 2006, *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, Cambridge, MA: The MIT Press. (hereafter referred to as “IE book”)

PDF of book accessible from MIT Press website at:

<http://mitpress.mit.edu/catalog/item/default.asp?ttype=2&tid=11447>

(I obviously don't mind if you also decide to buy it!

[http://www.amazon.com/Invisible-Engines-Platforms-Innovation-Industries/dp/0262550687/ref=sr\\_1\\_1?ie=UTF8&s=books&qid=1243847610&sr=8-1](http://www.amazon.com/Invisible-Engines-Platforms-Innovation-Industries/dp/0262550687/ref=sr_1_1?ie=UTF8&s=books&qid=1243847610&sr=8-1) )

### **Session 1**

My slides should be enough to give you a solid background on network effects and some important applications

If you are curious about the first early papers in economics on network effects (direct), the following article provides a good survey (note it was written in 1994, long before the “two-sided market economics” took off):

Katz, Michael, and Carl Shapiro, “Systems Competition and Network Effects.” *Journal of Economic Perspectives* 8 (Spring 1994): 93–115.

Chapter 3 in the IE book also contains some background on network effects and economies of scale, especially on how they apply to software platforms and related industries.

Another reference book on network effects and the information economy:

Shapiro, Carl, and Hal Varian. *Information Rules*. Cambridge, MA, Harvard Business School Press, 1998.

### **Session 2**

Divide and Conquer:

- Jullien, B. (2008) “Competing in Network Industries: Divide and Conquer,” working paper, IDEI Toulouse, available at: <http://idei.fr/doc/by/jullien/jullienc0701.pdf>
- Caillaud, B. and B. Jullien, 2003, “Chicken and Egg: Competition Among Intermediation Service Providers,” *Rand Journal of Economics*, 34(2), 309-328.

General principles on two-sided pricing:

- Armstrong, M., 2006, "Competition in Two-Sided Markets," *Rand Journal of Economics*, 37(3), 669-691.
- Parker G. and Van Alstyne M. (2005) “Two-Sided Network Effects: A Theory of Information Product Design,” *Management Science*, Vol. 51, No. 10.
- Rochet, J.-C., and J. Tirole (2003) “Platform Competition in Two-Sided Markets,” *Journal of the European Economic Association*, Vol. 1 (4), 990-1029.

Further readings:

- Armstrong, M. and J. Wright, 2007, "Two-sided Markets, Competitive Bottlenecks and Exclusive Contracts," *Economic Theory*, 32 (2), 353-380. [VERY TECHNICAL]

### Session 3

Hagiu, A. “Two-Sided Platforms: Product Variety and Pricing Structures,” forthcoming, *Journal of Economics and Management Strategy*, 2009.

Available at:  
<http://www.people.hbs.edu/ahagiu/Two%20Sided%20Platform%20Pricing%20JEMS%20accepted%2003072009.pdf>

Chapters 5 (videogames) and 10 in the IE book contain in-depth analyses of pricing strategies by videogames platforms, comparison between videogames and PCs and general principles of two-sided pricing (especially as they apply to software platforms)

If you are very interested in videogames, the entire detailed story of Microsoft’s entry (including their unsuccessful efforts to replicate the PC model) is covered in:

Takahashi, Dean *Opening the Xbox*. Roseville, Calif.: Prima Publishing, 2002.

#### Session 4

Some references on bundling:

- Chapter 11 in the IE book for discussion of bundling issues relevant to software platforms
- George J. Stigler, “*United States v. Loew’s Inc.: A Note on Block Booking*,” *Supreme Court Review* 152 (1963): 152–157. This article is referred to in the chapter above: it aims to explain why movie studios sell bundles of movies to theaters.
- Bakos, Yannis, and Erik Brynjolfsson. “Bundling Information Goods: Pricing, Profits, and Efficiency.” *Management Science* 45 (December 1999): 1613–1630
- Schmalensee, Richard. “Commodity Bundling by Single-Product Monopolies.” *Journal of Law and Economics* 25, no. 1 (April 1982): 67–71.

Commitment in two-sided markets:

- Hagiu, A., 2006 "Pricing and Commitment by Two-Sided Platforms," *Rand Journal of Economics*, 37 (3), 720-737.

Earlier version available at:

<http://www.people.hbs.edu/ahagiu/pricing%20and%20commitment%20by%20two-sided%20platforms%20revised%204%20Rand%20format%202222006.pdf>

(I strongly recommend the slides instead of this paper: the model in the slides is more intuitive and closer to applications)

#### Session 5

Akerlof, G. (1970) “The Market for Lemons: Quality Uncertainty and the Market Mechanism,” *The Quarterly Journal of Economics*, 84(3), pp. 488-500.

Boudreau, K. and A. Hagiu (2009) “Platform Rules: Multi-Sided Platforms As Regulators,” in Annabelle Gawer (ed), *Platforms, Markets and Innovation*, Cheltenham, UK and Northampton, MA, US: Edward Elgar, forthcoming 2009.

Available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1269966](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1269966)

Hagiu, A. (2009) “Quality vs. Quantity and Exclusion by Two-Sided Platforms,” Harvard Business School working paper. Available at:  
<http://www.people.hbs.edu/ahagiu/Quality%20vs.%20quantity%20and%20exclusion%20by%20TSPs%2004062009.pdf>

Biglaiser, G. (1993) “Middlemen As Experts,” *Rand Journal of Economics*, Vol. 24(2), pp. 212-223.

### **Session 6**

Hagiu, A. and B. Jullien (2008) “Why Do Intermediaries Divert Search?”, Harvard Business School working paper 08-010. Available at:  
<http://www.people.hbs.edu/ahagiu/Hagiu%20Jullien%20revision%2002122009%20HBS%20WP.pdf>

Lizzeri, A. (1999) “Information Revelation and Certification Intermediaries,” *Rand Journal of Economics*, Vol. 30(2), pp. 214-231.

Baye, M. R. and J. Morgan (2001) “Information Gatekeepers on the Internet and the Competitiveness of Homogeneous Product Markets,” *American Economic Review*, Vol. 91(3), pp. 454-474.

### **Session 7**

Evans, D.S. and R. Schmalensee (2009) “Failure To Launch: Critical Mass in Platform Businesses,” working paper available at:

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1353502](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1353502)

Eisenmann, T. and A. Hagiu (2007) “Staging Two-Sided Platforms,” HBS note 808-004.

Eisenmann, T. and A. Hagiu (2007) “A Staged Solution to the Catch-22,” Forethought column, *Harvard Business Review*, 25-26, November.

## **Session 8**

Li & Fung HBS case study

Gome HBS case study

## **Session 9**

IE book, chapter 9, in particular pages 256-259.

Hagiu, A. (2007) "Merchant or Two-Sided Platform?" *Review of Network Economics*, Vol. 6(2), 115-133.

Rochet, J.-C., and J. Tirole (2006) "Two-Sided Markets: Where We Stand," *Rand Journal of Economics*, Vol. 37 (3), pp. 645-666.