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Antitrust for the New Economy or New Economics for Antitrust: Summary of Remarks at the FTC/DOJ Hearings: "Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy"

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I. Introduction

Is conventional antitrust policy capable of meeting the challenges of the new economy? This is a perennial question that receives generally the same answer: "Yes but…" The "but" recognizes that some features of the new economy require policy-makers, and economists, to adjust their conceptual models of how competition works and should work in the new economy. I have been asked by the organizers of these important Hearings to comment on some of these necessary adjustments in our collective thinking about how antitrust should be implemented. I found it useful to organize my remarks around the characteristics of the "new economy" identified in a recent article by Judge Posner.

Judge Posner's article, "Antitrust in the New Economy,"[1] spells out some of the main features of the new economy and offers some challenging insights for the *administration* of antitrust laws. I shall focus on how these main features implicate the analytics. In the new economy, Judge Posner finds:

- Falling average costs, on a product basis,
- Modest capital requirements[2]

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[1] Posner, R. "Antitrust in the New Economy," *Antitrust Law Journal*, 2001, 925-943.

[2] While indeed it may be the case that these capital requirements are modest in comparison with some old-fashioned smoke-stack industries, the fact of the matter is that the collapse of the dot.com sector has made it very difficult to raise capital, even modest amounts. Second, the capital requirements in the "hardware" sector (such as telecoms equipment), for example, are hardly trivial and there too, the

- Very high rates of innovation,
- Quick and frequent entry/exit,
- Network externalities that produce:
    - "Monopoly"
    - "Standards"
- Vertical integration

Hence, in Posner's version of the new economy, vertical integration and transactions among competitors are common and so is the need for competitor collaborations.[3]

II. Declining Average Costs

Regarding declining average costs, it is important to note that in equilibrium, the survivor (or survivors) should be pricing above some version of marginal cost in order to recoup its fixed costs. For any given pattern of consumer preferences, which are not immutable, the higher are the fixed costs, the fewer will be the number of survivors, and the resulting markup of price above marginal cost will be potentially larger. Since marginal cost pricing is not feasible, what is the proper benchmark for gauging whether prices are set at a "competitive" level or not?

A. Benchmarking

Let me note that since marginal cost is not the proper benchmark, the usefulness or applicability of the recent advances in the "econometrics" of market power may be limited. After all, those models use the concept of the elasticities–adjusted Lerner index as the foundation of the model to be estimated and as the main "object" of the analyst's interest.

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downturn likely will make it more difficult to raise funds in the future, once the economic conditions improve. Hence, even these allegedly modest capital requirements do not portend easy entry.

[3] The need for collaboration is perhaps less novel than one may surmise from Posner's paper. After all, during the peak of fears that Japan's industry is going to vanquish U.S. firms, research joint ventures and other partnering arrangements were touted as an important solution to the innovation crisis in the U.S.

Hence, my question for the audience is: What should be the new paradigm for econometrics of market power?

As observed by Gilbert and Katz in "An Economist's Guide to Microsoft,"[4] long-run average cost (LAC) is one potential benchmark. However, using LAC raises the usual set of issues surrounding the calculation of LAC for a multi-product firm. For example, if Microsoft is developing numerous software programs, a good portion of the development costs may be common to all the products, and the LAC for any single product will be difficult, or even impossible, to reliably determine. Thus, if Microsoft is not charging a price equal to marginal cost for its software, as it cannot, what price level would signal that it has "monopoly power" in some relevant market? Perhaps, a fall-back might be average total product/service long-run incremental cost, as it has been developed in the telecommunications regulatory arena. However, before one jumps to embrace this concept, it is worth noting that this measure of costs is difficult to estimate econometrically and the usual tricks employed to "infer" marginal costs from the equilibrium conditions just will not do.

Furthermore, forcing firms to price at LAC may lessen incentives to innovate since the LAC only allows for a risk-adjusted rate of return on an investment. A better gauge could be a persistence of returns in excess of LAC, rather than temporary departures there from.

B. Sophisticated Pricing

Declining average costs create another challenging antitrust issue, that of "sophisticated" pricing. By sophisticated pricing, I mean pricing strategies that deviate from the standard of constant per unit price. The fact that declining AC creates incentives for such pricing is not sufficiently appreciated by antitrust regulators because such pricing is viewed as inconsistent with competition. Indeed,

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[4] Gilbert, Richard J. and Michael L. Katz, "An Economist's Guide to US v. Microsoft," *Journal of Econonomic Perspectives*, Vol. 15/No. 2 (Spring 2001), 25-44.

antitrust policy continues to exhibit a certain degree of animosity towards sophisticated pricing strategies:

- *See* Robinson-Patman Act,[5]
- In its analysis of Exxon/Mobil, the FTC concluded that the presence of "zone" pricing provided sufficient evidence that imperfect competition exists in retail gasoline markets.[6]

When costs are fixed and substantial, sophisticated pricing leads to:

- Discounts related to volume and/or loyalty payments
- Bundling
- Second-degree price discrimination based on self-selection

These are often the only means for extracting enough revenues to recover the substantial up-front investment. Moreover, price discrimination is not invariably a signal that the relevant market is not competitive. In fact, discriminatory pricing can be present in competitive markets and as such should not automatically raise antitrust concerns.[7]

As always, there is a potential "dark" side. Sophisticated pricing can make it easier to lock-in customers and thus limit the demand available to new entrants. Sophisticated pricing can make detection of "predation" more difficult. Sophisticated pricing, made possible by the new digital/web-based economy, can modify the mechanisms that an intellectual property owner employs to charge for his product, potentially in ways that are at odds with the social goals of intellectual property statutes.

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[5] Sections 2(a) to 2(j) of the Clayton Act, 15 USC §13(a)–13(j)

[6] Federal Trade Commission, "Analysis of Proposed Consent Order to Aid Public Comment," Docket No. C-3907, November 30, 1999, pp. 5–6.

[7] For a nice model and references, *see* Armstrong, Christopher M. and John Vickers, "Competitive Price Discrimination," RAND Journal of Economics (Winter 2001), pp. 579-605.

- *See* Larry Lessig on usage-sensitive pricing of content[8]
- Web-based music and other content
- Up-grades and differential pricing for old/new products in software

III. Network Externalities

The importance of modest capital requirements, high rates of innovation, and quick and frequent entry/exit in the new economy will be addressed by other members of the panel, so let me say a few words about the interaction between declining average costs and network externalities as it bears on one issue – predation.

A. General Arguments

We can think about both declining AC and network externalities as sharpening the battle for the market, since only one, or at best very few, firms will survive in the market in the long-run equilibrium. Thus, being the sole survivor (or one of the few) may generate profits sufficient to induce a heated competitive battle.

So how nasty can such a battle get without tripping the antitrust circuit breakers? One possible answer might be that there should be no limits whatsoever, since the quick entry/exit feature of the new economy identified by Judge Posner should take care of the resultant monopolist in due course, and the due course will be soon. Others on the panel will speak to this issue from the vantage point of experience with empirical evidence.

Let me suggest that the previous answer, while appealing in many ways, is contrary to the prediction that network effects create frictions in replacing the incumbent. Hence, the "happy hour" of monopoly may extend way past the pundit's or the expert's forecast of its scheduled closing time. Here, then, the role of the regulator is to ensure that the battle for the market is kept open and that the rightful advantages of incumbency do not translate into its perpetuation against superior

[8] Lessig, Lawrence, Code and Other Laws of Cyberspace, (New York: Basic Books), 2000.

offerings.[9] If one models this battle for the market, the disturbing results (from auction models, for example) suggest that an initially cost-advantaged firm may be able to prevail against its rivals at more and more advantageous terms as its advantage *vis-à-vis* rivals opens up, potentially leading to total discouragement of potential entry. It is this type of dynamic outcome that is most troubling.

B. A Simple Model

Let's now return to the assignment. Consider a simple model of a two period game with network effects. In period one, either firm A or B captures the market. In the second period, if the first-period loser is still alive and kicking, a new round of competition ensues upon arrival of new customers. In this model, the winner in period one, say firm A, now has the demand-side advantage over firm B, which may outweigh whatever cost-advantage firm B may possess in period two. Thus, while aggressive action by firm A in period one does not raise firm B's cost, it has the economic equivalent, *i.e.*, it deteriorates the quality and consumer value of the rival product in the second period. Stated another way, aggressive pricing in period one has the effect of lessening the competitive restraint that the rival can impose on the winner in the future.

So how should this risk of undue "hobbling" be reflected in the restrictions placed on the actions of firm A (or B) in the initial period? Standards proposed by Ordover/Willig[10] suggest that the competitive vigor of firm A should not be limited in any way, provided that, in its reduced-form profit function, the competitive viability of firm B is assumed to remain intact. This, of course, begs the question to some extent, since the competitive viability of firm B (which we linked to its costs and/or product quality) is not <u>independent</u> of firm A's actions, as was implicitly assumed in the original Ordover/Willig paper.

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[9] This does not mean, of course, that the incumbent's ability or incentives to innovate should be hobbled so as to give another firm a "break."

[10] Ordover, J.A. and R.D. Willig, "An Economic Definition of Predation: Pricing and Product Innovation," *Yale Law Journal*, vol. 91, November 1981, 8-53.

My formulation in the IO Handbook chapter with Garth Saloner[11] offers some illumination of the pertinent calculation, but it does not provide a fully worked-out standard. My current hunch is that the competitive viability constraint essentially ensures that in deciding on its conduct in the first period, firm A should be allowed to price as aggressively as it wants under the counterfactual assumption that in the second period, firm B will (or could) operate a "hypothetical" network of its own of some pre-specified size, for example the size it would have had it won the competition in the first round.

Put another way, firm A's calculation runs something like this:

- If I don't win, firm B will have a network N_{B2} at the start of the second period and I will have $N_{A2} = 0$.
- If I do win, firm B will have a network N^, which could be equal to the network that B would have had had it won all the customers in the first period or could be less than that depending on some plausible rule of hypothetically dividing the market in the 1st period, and I will have a network N_{A2} at the start of the second period.

The question firm A must answer is this: How much am I willing to bribe with low prices the consumers in the first period to go with me in order to avoid being disadvantaged by a lack of an installed base in period two, given that the benefits from being the survivor are capped by the hypothetical competition from the rival network?

Frankly, I have no idea how this approach will work from a total welfare standpoint, but it has a certain appeal and is not inconsistent with what I have said over the years. It is also consistent with Gilbert and Newbery's[12] approach of

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[11] Ordover, J.A. and G. Saloner, "Predation, Monopolization, and Antitrust," in R. Schmalensee and R.D. Willig (eds.), *Handbook of Industrial Organization*, vol. 1, North Holland, 1989, 538-596.

[12] Gilbert, R. and D. Newbery, "Preemptive Patenting and the Persistence of Monopoly," *American Economic Review*, 1982, pp. 514-526.

restricting the incumbent monopolist's ability to pay for future IP in bidding against an new rival, for example. (*See* my discussion in a paper with Will Baumol.[13])

As we have seen, when you add network externalities to the mix, the already complicated competitive calculus becomes still more complex. So perhaps one way to lessen the assessment burden is to insist that the networks be rendered less proprietary than the free interplay of market forces may secure.

IV. Vertical Integration and Access

This brings me briefly to one of my obsessions: the question of access. As Judge Posner noted, the new economy is characterized by extensive vertical integration, frequent transactions among firms that are notional competitors, as well as valuable installed bases of consumers, or real assets (such as telecommunications networks, ATMs, and software).

A radical proposal may be to insist on extensive opening of access to these valuable bottlenecks. Indeed, I myself agree with such proposals with respect to telecom networks (although I have shied away from advocating such for cable broadband networks, for example).[14]

Let me say that "open access" is not a panacea. First, what does "open" mean exactly? Quality and timing both can be critical in the assessment.

Second, what are the terms on which access should be granted? The battle over the proper pricing methodology for unbundled network elements that comprise local telecommunications networks is now six years old and has yet to be resolved. I believe that pricing issues may be even more challenging when it comes to the pricing of access to IP assets. Indeed, at an FTC conference over twenty years ago, Bobby Willig and I supported an analytical approach that could guide pricing

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[13] Ordover, J.A. and W.J. Baumol, "Antitrust Policy for High-Technology Industries," *Oxford Review of Economic Policy*, vol. 4, Winter 1988, 13-34. Reprinted in E. Fox and J. Halverson (eds.), *Collaborations Among Competitors: Antitrust Policy and Economics*, American Bar Association, 1991, 949-984.

[14] In a recent decision, the FCC has also concluded that cable broadband networks need not be opened to

decisions for access in systems markets. It now seems that our analytical approach has aged better than I have.

Third, one may also argue that if firms were to labor under the ever-present fear that they may be required to open access to their strategic assets, their incentives to invest in such assets in the first place could be severely dampened. We do not yet have enough economic research – empirical and theoretical – to gauge how serious will be these disincentives to investment. I am inclined to suggest that if the terms of access were operated using the familiar price caps regulation then such incentives could potentially be preserved. But this is only a hunch.

Thank you.

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competitive ISPs.