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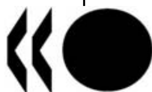

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DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
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ROUNDTABLE ON BARRIERS TO ENTRY

-- Note by the United States --

This note is submitted by the Delegation of the United States to the Competition Committee FOR DISCUSSION at its forthcoming meeting to be held on 19-20 October 2005.

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1. The central concern of U.S. antitrust law is market power—"the ability to raise prices above those that would be charged in a competitive market."[1] Because market power in small degrees is ubiquitous, the leading treatise properly observed that: "Market power need not trouble the antitrust authorities unless it is both substantial in magnitude and durable."[2] U.S. courts recognise that "even a very large market share does not establish market power" of any significance,[3] observing that "without barriers to entry into the market it would presumably be impossible to maintain supracompetitive prices for an extended time."[4]

1. Defining Barriers to Entry

2. In the first systematic economic study of entry, Joe Bain coined the term "barriers to entry," which he used to describe several specific aspects of market structure that could prevent entry.[5] Bain later generically defined a "barrier to entry" as "some source of disadvantage to potential entrants as compared with established firms."[6] In response to Bain's work, George Stigler suggested instead that: "A barrier to entry may be defined as a cost of producing (at some or every rate of output) which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry."[7] Stigler's main point was merely that "the language of economists has been lax."[8] He did not maintain that serious antitrust problems were impossible without "barriers to entry" as he defined the term; indeed, he elsewhere argued that mergers to monopoly early in the Twentieth Century had been both profitable and anticompetitive without any "barriers to entry" because the entry they attracted took significant time to occur.[9] Stigler's definition of "barriers to entry" probably is used by economists more often than Bain's definition, but Bain's is also used, and many other definitions have been proposed.[10]

3. Dennis Carlton's recent reaction to the long-running definition debate concludes:

> Barriers to entry, as identified by Bain, is a confusing concept. Barriers to entry as defined by Stigler is clear, but perhaps strange, because the words mean something other than what would naturally come to mind. In any case, the failure of the concept of barriers to entry to incorporate a time dimension means that it is a concept in need of embellishment in order to be useful in a practical problem or for antitrust or regulatory proceedings.[11]

4. Carlton explains that Stigler's definition is appropriate if the task is to identify conditions under which rates of return will persist at supracompetitive levels, but it is not appropriate if the task is to identify conditions giving rise to significant antitrust concerns.[12] In an antitrust case, Carlton argues that it is not useful to ask "whether an 'entry barrier' exists according to some definition," rather one should consider "how the industry will behave over the next several years."[13]

5. The leading U.S. antitrust treatise explains that Stigler's definition "does not respond to the primary reason antitrust law concerns itself with entry barriers,"[14] and courts in the United States generally have articulated definitions more like Bain's.[15] The Tenth Circuit held that "[e]ntry barriers are particular characteristics of a market which impede entry by new firms into that market"[16] and that "[b]arriers to entry are market characteristics which make it difficult or time-consuming for new firms to enter a market."[17] Similarly, the D.C. Circuit held that "'Entry barriers' are factors (such as certain regulatory requirements) that prevent new rivals from timely responding to an increase in price above the competitive level"[18] and that "[a]ny market condition that makes entry more costly or time-consuming and thus reduces the effectiveness of potential competition as a constraint on the pricing behaviour of the dominant firm should be considered a barrier to entry."[19] The Ninth Circuit has adopted a definition that explicitly incorporates both the Bain and Stigler definitions in the alternative: "Barriers to entry may be defined as either additional long-run costs that were not incurred by incumbent firms but must be incurred by new

entrants, or factors in the market that deter entry while permitting incumbent firms to earn monopoly returns."[20]

2. Differing Treatments of Entry in Different Antitrust Contexts

6. Cases under section 1 of the Sherman Act involve allegations of unreasonable restraints of trade. Applying the "per se rule," unreasonableness is established as a matter of law when competitors agree not to compete or agree to fix prices or restrict output.[21] Under the "rule of reason," which applies to most restraints, the application of Section 1 requires "an inquiry into market power and market structure designed to assess the . . . actual effect" of a restraint.[22] Establishing "market power is essential; without it, any case . . . collapses because consumers could not be injured."[23] The standard approach to demonstrating that a defendant possesses the requisite market power is to "(1) define the relevant market, (2) show that the defendant owns a dominant share of that market, and (3) show that there are significant barriers to entry."[24] The third element is essential to address whether the rapid emergence of new competition would not prevent the challenged restraint from producing the consumer injury necessary to render it unreasonable.

7. Cases under section 2 of the Sherman Act involve allegations that the defendant engaged in exclusionary conduct threatening to create or maintain "monopoly power," which is distinguished from "market power" as a matter of degree.[25] This distinction makes the durability of market power a more important issue in Section 2 cases than it is in Section 1 cases,[26] and courts commonly dispose of Section 2 cases on entry-related grounds.[27] Their rationale is that "anticompetitive exclusionary practices would be unprofitable and presumably would not occur" because "entry would deny firms monopoly profits."[28]

8. Cases under section 7 of the Clayton Act involve allegations that a merger or acquisition has had, or would be likely to have, the effect of creating or enhancing market power. U.S. courts have noted the possibility that entry can prevent or quickly reverse the anticompetitive effect of a merger,[29] and the *Horizontal Merger Guidelines* issued by the U.S. enforcement agencies state that a "merger is not likely to create or enhance market power . . . if entry into the market is so easy that market participants, after the merger, either collectively or unilaterally could not profitably maintain a price increase above premerger levels."[30]

9. In evaluating a proposed merger, the U.S. enforcement agencies do not assess barriers to entry as an abstract matter, but rather ask whether entry attracted by the merger "would be timely, likely, and sufficient in its magnitude, character and scope to deter or counteract the competitive effects" of the merger, thereby causing "prices to fall to their premerger levels or lower."[31] The issue is not whether entry is difficult, but rather whether the opportunity for entry created by the merger would be likely to provide a profit incentive sufficient to attract entry on a scale that would prevent or quickly reverse the anticompetitive effects of the merger.

10. The *Horizontal Merger Guidelines* indicate that entry generally is timely only if it would occur within two years,[32] and the U.S. agencies have often found it so clear that entry would not be timely that it was unnecessary to consider the likelihood or sufficiency of entry. It is not unusual to find that more than two years would be required to just construct the facilities an entrant would need to begin production.[33] In addition, entry into some industries entails other time-consuming steps, such as product development and testing, which would substantially delay entry.

11. Entry considerations are quite similar outside the merger context, and a few U.S. court decisions have adopted the framework of the *Horizontal Merger Guidelines* for evaluating entry in other types of antitrust cases.[34] The courts, however, have not focused specifically on what would constitute timely entry in cases not involving mergers. Because monopoly power under section 2 of the Sherman Act entails more

than market power under section 1 of the Sherman Act, a longer time frame generally is appropriate in cases under section 2 than in cases under Section 1.

3. Entry in Merger Enforcement

12. The U.S. enforcement agencies have considered entry issues in a large number of merger investigations. Consideration of a wide range of factors have led the agencies to conclude in many cases that sufficient entry was not likely to be attracted by a proposed merger. The factor most often found to be important was the extent of the unrecoverable investment required for entry, *i.e.*, the associated "sunk cost."[35] If the sunk cost associated with entry is too great in comparison with the likely returns, a merger will not attract entry.[36] The U.S. agencies sometimes have found that sunk costs associated with constructing a manufacturing facility, developing a product, or gaining customer acceptance were so great that a merger would not attract entry even if there were no risk of outright failure and the loss of the entire entry investment. The U.S. agencies expect entry to be attracted if potential entrants are likely to earn reasonable returns on their investments, even if the initial investment may be large. By the same token, a small initial investment could deter entry if the expected returns also were quite small.

13. More often, the U.S. agencies have found a substantial risk of failure is a large part of what makes entry unattractive. That risk may be particularly great when customers are unwilling to purchase a product without a well-established record of satisfactory performance. This has been found to be the case when unsatisfactory performance imposes exceptionally high costs on the customer, for example, because the failure of that product to perform in a manufacturing process forces the shutdown of an entire production line. Although an entrant might find ways of demonstrating reliability, they may cost so much and take so long that they are not realistic alternatives.

14. The U.S. agencies often have found that proposed mergers involving highly differentiated consumer products would not attract the entry of new brands. In a market populated by well-established brands, successful entry typically requires a substantial investment in advertising and promotional activity over a long period of time to build share and achieve widespread distribution through retail channels. Moreover, success is far from assured even when such investments are made.

15. The U.S. agencies also have found that other factors prevented mergers from attracting entry. Entry in the telecommunications industry often requires a licence for use of the electromagnetic spectrum, and entry in the health care industry may require approval from a state government. The presence of patent or other intellectual property rights may or may not pose a significant entry obstacle. Patents commonly are important in high-tech industries, but the U.S. agencies also have found that mergers in some low-tech industries would not attract entry because incumbents control patents essential to the production of competing products.[37]

16. The U.S. agencies have found that a few mergers would not attract entry because potential entrants would be unable to obtain a source of supply for essential inputs. Most examples involve scarce natural resources, but similar problems may confront a potential entrant requiring a supply of a key part for a manufactured product.

17. The U.S. agencies also have found in some cases that a merger would not attract entry because entrants would suffer significant cost disadvantages in competing with incumbents. This disadvantage tends to be most important when entrants would be unlikely to achieve the economies of scale and scope already achieved by incumbents. The U.S. agencies have found such economies to be decisive in a few industries in which efficiency requires a high density in delivery or pick up operations with customers. Obtaining the required density may be especially difficult if incumbents have long-term contracts with many existing customers.

18. Finally, the U.S. agencies have found in some cases that incumbents can thwart entry through strategic conduct. If entrants need to build up a critical mass of customers to achieve economies of scale, incumbents may be able to deny particular customers to an entrant by offering them preferential pricing. The agencies have found such strategies successful when an entrant would need to get the business of a limited number of identifiable customers (*e.g.*, the customers with expiring long-term supply contracts) or when it is easy to identify customers being solicited by an entrant (or those that agreed to do business with the entrant). Incumbents always can be expected to respond to entry, and one thing that sets this strategic conduct apart from the other responses is that incumbents are able to respond before entrants are able to generate any returns on their investments.[38]

19. As the foregoing makes clear, many different factors, individually or in combination, may prevent a merger from attracting entry. Nevertheless, the U.S. enforcement agencies find in many cases that proposed mergers would not lessen competition in large part because supracompetitive pricing would attract timely, likely, and sufficient entry. The main reason for such a finding most often is that sunk costs are quite low relative to potential rewards. Markets with growing demand also commonly are found to be conducive to entry. In some cases, the U.S. agencies have found that large customers can avoid being harmed by post-merger price increases by actively sponsoring entry or vertically integrating themselves.[39]

20. In recent years, the U.S. enforcement agencies have found that mergers involving very high market shares would not be anticompetitive because they would attract entry. For example, in its analysis of the 2002 acquisition of certain assets of Stagebill Media by Playbill Inc., the Department found that sunk costs of entry were trivial. In its analysis of the 2005 acquisition of Varco, Inc. by National Oilwell Inc., the Department found that large customers would effectively sponsor entry by committing to purchase from other companies that would expand their product lines or production capacity.

4. Entry in the *Microsoft* Case[40]

21. Microsoft's monopoly in PC operating systems was protected by the "applications barrier to entry," which, as explained by the court of appeals,

> stems from two characteristics of the software market: (1) most consumers prefer operating systems for which a large number of applications have already been written; and (2) most developers prefer to write for operating systems that already have a substantial consumer base. This "chicken-and-egg" situation ensures that applications will continue to be written for the already dominant Windows, which in turn ensures that consumers will continue to prefer it over other operating systems.[41]

22. The "applications" to which the court referred are things like word processors, spreadsheets, and games, which provide functionality to PC users. The trial court found that the "overwhelming majority of consumers will only use a PC operating system for which there already exists a large and varied set of high-quality, full-featured applications."[42] The court also found that "software developers generally write applications first, and often exclusively, for" Windows.[43] The reason is that "porting" an application written for one operating system to be run on another "is a costly process."[44]

23. The confluence of the behaviour the court attributed to PC users and that the court attributed to applications developers generates "an intractable 'chicken-and-egg' problem."[45]

> Users do not want to invest in an operating system until it is clear that the system will support generations of applications that will meet their needs, and developers do not want to invest in writing or quickly porting applications for an operating system until it is clear that there will be a sizeable and stable market for it.[46]

24. The court elaborated the workings of the "applications barrier to entry" at great length,[47] describing the critical forces in terms of what economics has dubbed a "positive network effect."[48] The users of an operating system form a network, and individual users benefit as the number of users increases. The more users of an operating system there are, the more applications will be created for that operating system, and this also benefits users.

25. Network effects and "chicken-and-egg" problems are both common, but they typically are not the powerful forces they were found to be in *Microsoft*. Indeed, there are many examples of successful entry in the presence of network effects, even though it was necessary to overcome a "chicken-and-egg" problem.

5. Government-Imposed Barriers to Entry

26. Although U.S. antitrust law most often involves enforcement against private actions, competition agencies must also consider the effects of government actions, such as government-imposed restrictions on entry.[49] A prime example is state certificate of need ("CON") laws, which prevent firms from entering certain areas of the health care market unless they can demonstrate to state authorities that there is an unmet need for their services. Applications for CONs are often opposed by incumbent providers, who have in some cases held off new entry in this way for decades.[50] DOJ and FTC have stated that CON programs can pose serious competitive concerns by shielding incumbent health care providers from new entrants that could provide higher quality services or innovative alternatives to costly treatments.[51]

27. In other cases, government may impose the same requirement on incumbents and new entrants, but the restraint operates very differently on the two groups and impedes entry by new-business-model, lower-cost firms in response to supracompetitive rates of return earned by incumbents. The U.S. enforcement agencies have opposed many state proposals to expand the definition of the practice of law to include the supervision of real estate closings, a service which most states allow non-lawyers to compete with lawyers to perform.[52] Although these licensing requirements—which are costly and time consuming—are not borne solely by new entrants, these requirements prevent the entry of lower-cost lay service providers[53] who do not engage in other activities—like representing parties in court—for which professional training and licensure may be appropriately required.[54]

28. As one former agency head observed, "[R]egulatory success in attacking private restraints increases the efforts that firms will devote to seeking public restraints. . . . Public restraints solve the entry problem more efficiently. Rather than ceaselessly monitoring the marketplace for new rivals, a firm can simply rely on a public regime that, for example, provides only a few licenses."[55]

6. Conclusion

29. As Professor Carlton argues, considerations of entry should not get bogged down in definitions; indeed, it may be best to avoid the term "barriers to entry." The issue properly framed is whether the facts of a particular case make it likely that entry would prevent the creation or enhancement of market or monopoly power that otherwise would follow from a merger of, or an agreement among, competitors, or from the improperly exclusionary conduct of a single firm. In addition, competition agencies should be cognisant that government-imposed restraints can also prevent competitive entry and reduce consumer welfare.

NOTES

1. NCAA v. Board of Regents of the University of Oklahoma, 468 U.S. 85, 109 n.38 (1984).

2. 2A Phillip E. Areeda, Herbert Hovenkamp, and John L. Solow, Antitrust Law ¶ 501, at 90 (2d ed. 2002). *See also* Reazin v. Blue Cross & Blue Shield of Kansas, Inc., 899 F.2d 951, 968 (10th Cir. 1990) ("market power, to be meaningful for antitrust purposes, must be durable"); Colorado Interstate Gas Co. v. Natural Gas Pipeline Co. of America, 885 F.2d 683, 696 n.21 (10th Cir. 1989) ("The durability of a firm's ability to charge supracompetitive prices" is "used to evaluate the degree of market power.").

3. Will v. Comprehensive Accounting Corp., 776 F.2d 665, 672 n.3 (7th Cir. 1985). *See also* Oahu Gas Service, Inc. v. Pacific Resources Inc., 838 F.2d 360, 366 (9th Cir. 1988); Ball Memorial Hospital, Inc. v. Mutual Hospital Insurance, 784 F.2d 1325, 1336 (7th Cir. 1986).

4. Matsushita Electric Industrial Co. v. Zenith Radio Corp., 475 U.S. 574, 591 n.15 (1986).

5. Joe S. Bain, Barriers to New Competition (1956).

6. Joe S. Bain, Industrial Organization 239 (1959).

7. George J. Stigler, The Organization of Industry 67, 67 (1968).

8. *Id.*

9. *See* George J. Stigler, *Monopoly and Oligopoly by Merger*, 40 American Economic Review (Papers & Proceedings) 23 (1950).

10. Seven definitions are given by R. Preston McAfee, Hugo M. Mialon, and Michael A. Williams, *What Is a Barrier to Entry?*, 94 American Economic Review (Papers & Proceedings) 461, 461–62 (2004).

11. Dennis W. Carlton, *Why Barriers to Entry Are Barriers to Understanding*, 94 American Economic Review (Papers & Proceedings) 466, 469–70 (2004).

12. *Id.* at 467. In this regard Carlton also cites clarifications of Stigler's definition from Harold Demsetz, *Barriers to Entry*, 72 American Economic Review (1982).

13. Carlton, *supra* note 10, at 469.

14. *See* Areeda et al., *supra* note 2, ¶ 420c, at 63. Some FTC decisions adopted Stigler's definition but also recognised a second category of "impediments to entry." *See* In re Echlin Mfg. Co., 105 F.T.C. 410, 485–86 (1985); B.F. Goodrich Co., 110 F.T.C. 207, 297 (1988).

15. Without articulating its own definition, the Seventh Circuit has cited Stigler's definition. *See* Ball Memorial Hospital, Inc. v. Mutual Hospital Insurance, Inc., 784 F.2d 1325, 1335 (7th Cir. 1986). It also has associated "barriers to entry" with cost advantages of incumbents. *See* Will v. Comprehensive Accounting Corp., 776 F.2d 665, 673 (7th Cir. 1985). This court, however, also has held that factors merely delaying entry are sufficient to create significant anticompetitive effects meriting condemnation under the antitrust laws. *See id.* at 672 n.3; FTC v. Elders Grain, Inc., 868 F.2d 901, 905 (1989).

16. Reazin v. Blue Cross & Blue Shield of Kansas, Inc., 899 F.2d 951, 968 (10th Cir. 1990).

17. Colorado Interstate Gas Co. v. Natural Gas Pipeline of America, 885 F.2d 683, 696 n.21 (10th Cir. 1989).

18 United States v. Microsoft Corp., 253 F.3d 34, 51 (D.C. Cir. 2001) (en banc).

19 Southern Pacific Communications Co. v. AT&T, 740 F.2d 980, 1001 (D.C. Cir. 1984).

20. Los Angeles Land Co. v. Brunswick Corp., 6 F.3d 1422, 1427–28 (9th Cir. 1993) (internal quotations omitted). *See also* Western Parcel Express v. United Parcel Service of America, Inc., 190 F.3d 974, 975 (9th Cir. 1999); Rebel Oil Co. v. Atlantic Richfield Co., 51 F.3d 1421, 1439 (9th Cir. 1995).

21. *See* Palmer v. BRG of Georgia, Inc., 498 U.S. 46 (1990); National Collegiate Athletic Association v. Board of Regents of University of Oklahoma, 468 U.S. 85, 100 (1984).

22. Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 768 (1984). On occasion, unreasonableness may be demonstrated through direct evidence of its anticompetitive impact. *See* Eastman Kodak Co. v. Image Technical Services, Inc., 504 U.S. 451, 477 (1992); FTC v. Indiana Federation of Dentists, 476 U.S. 447, 460–61 (1986). And sometimes unreasonableness may be apparent to any "observer with even a rudimentary understanding of economics." California Dental Association v. FTC, 526 U.S. 757, 770 (1999).

23. L.A.P.D., Inc. v. General Electric Corp., 132 F.3d 402, 405 (7th Cir. 1997).

24. Rebel Oil Co. v. Atlantic Richfield Co., 51 F.3d 1421, 1434 (9th Cir. 1995).

25. *See, e.g.*, Eastman Kodak Co. v. Image Technical Services, Inc., 504 U.S. 451, 481 (1992) ("Monopoly power under § 2 requires, of course, something greater than market power under § 1."); Reazin v. Blue Cross and Blue Shield of Kansas, Inc., 899 F.2d 951, 967 (10th Cir. 1990) ("Market and monopoly power only differ in degree—monopoly power is commonly thought of as 'substantial' market power."); George A. Hay, *Single Firm Conduct*, 57 Antitrust Law Journal 75, 81 (1988) (suggesting that with "mere market power . . . supranormal profits will be quickly eroded by new entry" while monopoly power provides "significantly greater insulation from the long-run forces of entry").

26. *See, e.g.*, Western Parcel Express v. United Parcel Service of America, Inc., 190 F.3d 974, 975 (9th Cir. 1999) (to satisfy the monopoly power requirement of Section 2, the plaintiff must "show that there are significant barriers to entry"); Colorado Interstate Gas Co. v. Natural Gas Pipeline Co., 885 F.2d 683, 695–96 (10th Cir. 1989) ("If the evidence demonstrates that a firm's ability to charge monopoly prices will necessarily be temporary, the firm will not possess the degree of market power required for the monopolisation offense.").

27. *See, e.g.*, American Professional Testing Service, Inc. v. Harcourt Brace Jovanovich Legal & Professional Publications, Inc., 108 F.3d 1147, 1154 (9th Cir. 1997); Dial A Car, Inc. v. Transportation, Inc., 82 F.3d 484, 487–88 (D.C. Cir. 1996); Advo, Inc. v. Philadelphia Newspapers, Inc., 51 F.3d 1191, 1200–02 (3d Cir. 1995); Los Angeles Land Co. v. Brunswick Corp., 6 F.3d 1422, 1425–29 (9th Cir. 1993).

28. Areeda et al., *supra* note 2, ¶ 420, at 58.

29. *See* United States v. Phillipsburg National Bank & Trust Co., 399 U.S. 350, 377 (1970) (Harlan, J., dissenting); FTC v. H.J. Heinz Co., 246 F.3d 708, 717 n.13 (D.C. Cir. 2001). Entry was the major factor cited by courts of appeals rejecting merger challenges by the U.S. agencies. United States v. Baker Hughes Inc., 908 F.2d 981, 985–89 (D.C. Cir. 1990); United States v. Syufy Enterprises, 903 F.2d 659, 664–69 (9th Cir. 1990); United States v. Waste Management, Inc., 743 F.2d 976, 981–84 (2d Cir. 1984). These decisions occurred during a brief period in which courts were exceptionally receptive to defendants' entry arguments. *See* Richard Schmalensee, *Ease of Entry: Has the Concept Been Applied Too Readily?*, 56 Antitrust Law Journal 41 (1989).

30. U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* § 3.0 (1992, revised 1997). On the approach to entry taken by the *Horizontal Merger Guidelines* and associated issues, see generally Jonathan B. Baker, *Responding to Developments in Economics and the Courts: Entry in the Merger Guidelines*, 71 Antitrust Law Journal 189 (2003).

31. *Horizontal Merger Guidelines* § 3.0. U.S. courts also have adopted this framework. *See, e.g.*, United States v. Oracle Corp., 331 F. Supp. 2d 1098, 1111 (N.D. Cal. 2004); FTC v. Cardinal Health, Inc., 12 F.

Supp. 2d 34, 55 (D.D.C. 1998); HTI Health Services, Inc. v. Quorum Health Group, Inc., 960 F. Supp. 1104, 1133 & n.27 (S.D. Miss. 1997).

32. *Horizontal Merger Guidelines* § 3.2. If it is clear that no anticompetitive effects could arise immediately after the merger (*e.g.*, because pre-merger prices are locked in through long-term contracts), the two years runs from whenever the anticompetitive effects could arise.

33. *See* John C. Hilke & Philip B. Nelson, *The Economics of Entry Lags: A Theoretical and Empirical Overview*, 61 Antitrust Law Journal 365, 379–84 (1993).

34. *See* Rebel Oil Co., Inc. v. Atlantic Richfield Co., 51 F.3d 1421, 1440 (9th Cir. 1995); United States v. Visa U.S.A., Inc., 163 F. Supp. 2d 322, 342 (S.D.N.Y. 2001).

35. The central role of sunk costs in the analysis of entry was explained by William J. Baumol & Robert D. Willig, *Fixed Cost, Sunk Cost, Entry Barriers and the Sustainability of Monopoly*, 95 Quarterly Journal of Economics 405 (1981). On the role of sunk costs in the context of a particular model of competitive interaction, see Robert D. Willig, *Merger Analysis, Industrial Organization Theory, and Merger Guidelines*, 1991 Brookings Papers on Economic Activity, Microeconomics 281, 308–10.

36. In the context of standard models of unilateral effects, modest sunk costs commonly can be sufficient to prevent entry following anticompetitive mergers. *See* Gregory J. Werden & Luke M. Froeb, *The Entry-Inducing Effects of Horizontal Mergers: An Exploratory Analysis*, 46 Journal of Industrial Economics 525 (1998).

37. The U.S. agencies do not find patents or other intellectual property rights to pose significant entry obstacles when competing products can be produced without infringing intellectual property rights or when necessary intellectual property rights are readily licensed at reasonable terms.

38. On the importance of timing, see Marius Schwartz & Robert J. Reynolds, *Contestable Markets: An Uprising in the Theory of Industry Structure: Comment*, 73 American Economic Review 488 (1983).

39. The U.S. agencies also consider whether such customer reactions to a merger would prevent price increases only to some customers, leaving many other customers vulnerable.

40. United States v. Microsoft Corp., 84 F. Supp. 2d 9 (D.D.C. 2000) (findings of fact), 87 F. Supp. 2d 30 (D.D.C. 2000) (conclusions of law), *affirmed in relevant part*, 253 F.3d 34 (D.C. Cir. 2001) (en banc). For a far more extensive treatment of entry in the case, see Gregory J. Werden, *Network Effects and Conditions of Entry: Lessons from the* Microsoft *Case*, 69 Antitrust Law Journal 87 (2001).

41. 253 F.3d at 55, citing 84 F. Supp. 2d at 18–19.

42. 84 F. Supp. 2d at 18.

43. *Id.*

44. *Id.* Applications access the services of an operating system though the “application programming interfaces” (APIs) an operating system provides. Different operating systems contain different APIs, so there is a cost to “porting” an application from one operating system to another. An applications developer ports a product to a particular operating system if doing so is expected to be profitable as the result of increased sales of the application plus any added financial incentives that may be offered by the owner of the operating system.

45. 84 F. Supp. 2d at 18.

46. *Id.*

47. *Id.* at 18–24.

48. For non-technical discussions of the economics of networks, see Carl Shapiro & Hal R. Varian, Information Rules ch. 7 (1999); S.J. Liebowitz & Stephen E. Margolis, *Network Effects and Externalities*,

in 2 The New Palgrave Dictionary of Economics and the Law 671 (Peter Newman, ed., 1998); Nicholas Economides, *The Economics of Networks*, 14 International Journal of Industrial Organization 673 (1996); Michael L. Katz & Carl Shapiro, *Systems Competition and Network Competition*, 8 Journal of Economic Perspectives 93 (1994).

49. Government-imposed restrictions on entry, such as license requirements, can be considered barriers to entry under the broader definition set forth by courts such as the D.C. and 9th Circuits. *See* nn.19–20 *supra.*

50. *See* U.S. Department of Justice and Federal Trade Commission, Improving Health Care: A Dose of Competition ch. 8, p. 4 (July 2004), *available at* http://www.ftc.gov/reports/healthcare/040723healthcarerpt.pdf. A number of antitrust suits have alleged that incumbent health care providers made misrepresentations in CON proceedings to the detriment of new entrants. Armstrong Surgical Center, Inc. v. Armstrong Country Memorial Hospital, 185 F.3d 154 (3rd Cir. 1999); Kottle v. Northwest Kidney Centers, 146 F.3d 1056 (9th Cir. 1998); St. Joseph's Hospital, Inc. v. Hospital Corp. of America, 690 F.2d 1240 (9th Cir. 1982).

51. Improving Health Care, *supra* note 50, ch. 8, p. 6 ("The Agencies believe that CON programs are generally not successful in containing health care costs and that they can pose anticompetitive risks. . . . .CON programs risk entrenching oligopolists and eroding consumer welfare.")

52. *See, e.g.,* Comments on Kansas Bar Association's Proposed Definition of the Practice of Law (Feb. 4, 2005), *available at* http:/www.usdoj.gov/atr/public/comments/207619.pdf; Comments on Draft Proposed Definition of the Practice of Law in Massachusetts (Dec. 16, 2004), *available at* http://www.usdoj.gov/atr/public/comments/206843.pdf; Brief Amici Curiae of the Federal Trade Commission and the United States of America, McMahon v. Advanced Title Services Co. of West Virginia, No. 31706 (Supreme Court of Appeals of the State of West Virginia May 25, 2004), *available at* http://www.ftc.gov/be/V040017.pdf.

53. In 1997, Virginia passed a law upholding the right of consumers to continue using lay closing services. Proponents of lay competition pointed to survey evidence suggesting that lay closings in Virginia cost on average more than $150 less than attorney closings. *See* letter from the U.S. Department of Justice and the FTC to Supreme Court of Virginia (Jan. 3, 1997), *available at* http://www.usdoj.gov/atr/public/comments/3967.pdf; Letter from the U.S. Department of Justice and the FTC to Virginia State Bar (Sept. 20, 1996), *available at* http:/www.usdoj.gov/atr/public/comments/0886.pdf.

54. This phenomenon occurs in many industries. For example, the FTC has also opposed professional licensing requirements for firms that simply sell contact lenses pursuant to a valid prescription, *see* Possible Barriers to E-commerce: Contact Lenses: a Report from the Staff of the Federal Trade Commission (Mar. 29, 2004), *available at* http:/www.ftc.gov/os/2004/03/040329clreportfinal.pdf, and for firms that sell caskets over the Internet, *see* Memorandum of Law of Amicus Curiae Federal Trade Commission, Powers v. Harris, No. CIV-01-445-F (W.D. Okla. Sept. 5, 2002), *available at* http://www.ftc.gov/os/2002/09/okamicus.pdf. In these cases, the new entrants did not perform services—such as eye exams or embalming—for which professional training and licensure may be justified for consumer protection reasons.

55. Timothy J. Muris, *Principles for a Successful Competition Agency*, 72 University Of Chicago Law Review 165, 170 (2005).