Interoperability: "Indispensability" and "Special Responsibility" in High Technology Markets

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Article 82 of the European Community Treaty (EC Treaty) imposes duties on dominant undertakings in EC competition law to make available certain information that is considered necessary for interoperability in high technology markets. This liability derives from the "duty to deal" imposed on undertakings in a dominant position and the scope of the duty comprises one of the major issues currently before the Court of First Instance in Microsoft's appeal against the European Commission's 2004 decision. Drawing on comparative materials, this Article interrogates the view that the EC duty extends beyond that currently imposed under U.S. antitrust law with potentially adverse consequences for consumer welfare in high technology markets.

One of the central issues before the Court of First Instance in the appeal against the European Commission's 2004 decision in *Microsoft*[1]

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is the question of "interoperability." Interoperability generally arises in high technology markets where software producers may be dependent on interface information concerning the operation of other software (e.g., platform operating systems) in order to produce products (applications) which are compatible. The failure of a dominant undertaking to supply this information may, in some circumstances, be considered an abuse under article 82 of the EC Treaty.[2]

While software providers often make interoperability information available in response to incentives to facilitate connectivity in the marketplace, the question remains: is a failure to supply this information actionable? Much of the information relates to copyrighted materials. The importance of this information to innovation and the competitiveness of the European high technology and software industry has already led to the promulgation of Council Directive 91/250/EEC on the legal protection of computer programs (the Software Directive).[3] It requires EU Member States to introduce copyright protection for software programs but specifically provides that copyright invested in software programs will not be infringed by a licensee who observes, studies, or tests the functioning of the program in order to determine the ideas and principles which underlie any element of the program.[4] Article 6(1) of the Software Directive specifically permits the right to access certain interface information through the process of decompilation or reverse engineering. It permits the reproduction of the code and translation of its form where this is "indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs."[5]

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1. Commission Decision of 24 March 2004, Case COMP/C-3/37.792 (Microsoft), *available at* http://ec.europa.eu/comm/competition/antitrust/cases/decisions/37792/en.pdf. Appeal to Court of First Instance pending, Case T-201/04.

2. The issue had previously arisen when the Commission alleged that IBM had abused its dominant position by failing to supply other manufacturers with interface information needed to make competitive products work with IBM's System/370. The case was settled and IBM agreed to make available sufficient interface information to enable competitors in the EEC to attach hardware and software products of their own design to System/370. *See* Commission Case IV/29.479; IBM XIVth *Report on Competition Policy* (Commission 1984), 3 C.M.L.R. 147 (1984), pts. 94-5.

3. 1991 O.J. (L 122/42); *cf.* Report from the Commission on the Implementation and Effects of Directive 91/250/EEC on the Legal Protection of Computer Programs, COM (2000) 199 final, *available at* http://eur-lex.europa.eu/LexUriServ/site/en/com/2000/com2000_0199en01.pdf.

4. Council Directive 91/250/EEC, art. 5, 1991 O.J. (L 122/42).

5. *Id.* art. 6(2)(c). The acts are confined to parts of the original program which are necessary to achieve interoperability. The information cannot be used for the development, production, or marketing of a computer program substantially similar in its expression, or for any other act which infringes copyright.

The right to decompile in article 6 of the Software Directive applies whether or not the copyright holder is dominant in the market. This is problematic when decompilation or reverse engineering is impossible or not practically or economically feasible, especially given the rapid nature of innovation in this industry or when the software designers' request for the information directly from the copyright owner is refused.[6]

In 2004 the European Commission fined Microsoft €497 million for refusing to supply interoperability information, contrary to article 82, to Sun Microsystems (and others) who required this information to create work group server operating systems that fully interoperated with Microsoft's Windows client PC operating system.[7] Specifically, it was found that Microsoft did not expose sufficient "Application Programming Interfaces" (APIs), which enable programs to work over a number of operating systems, in order to allow servers, other than Microsoft's server, to run on its operating system.[8]

The Commission found that Microsoft was dominant in the market for operating systems for Intel-compatible PCs and was presumed dominant in the market for group server operating systems. It concluded that "Microsoft's behaviour risks eliminating competition in the work group server operating system market, due to the indispensability of the input that it refuses to supply to its competitors."[9] This was found to have a negative impact on technical development, thereby locking consumers into a homogenous Windows solution and damaging innovation in the work group server software market to the prejudice of consumers.[10]

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6. The Software Directive is without prejudice to the application of the competition rules under articles 81 and 82 of the EC Treaty if a dominant supplier refuses to make information available that is necessary for interoperability.

7. Eur. Comm'n, *supra* note 1. The Commission also found that Microsoft had tied its Windows Media Player to the Windows operating system, lessening competition from other media players. This aspect of the decision will not be dealt with in this Article.

8. Operating systems function as a platform for software by "exposing" APIs which allow certain frequently used functions to be used by other software developers.

9. Eur. Comm'n, *supra* note 1, para. 692.

10. Contrary to article 82(b), "limiting production, markets or technical development to the prejudice of consumers." *Id.* paras. 712, 1065. The order to hand over interoperability information is enforced by a "monitoring trustee." The President of the Court of First Instance has rejected Microsoft's application for suspension of certain remedies imposed by the Commission. Order of the President of the Court of First Instance of December 22, 2004, in Case T-210/04 R, *Microsoft Corp. v. EC Comm'n*. The only issue to be decided by the President was whether the decision should be suspended in order to prevent serious and irreparable damage to Microsoft. The President concluded that Microsoft failed to show interference with its business policy or injury to its reputation that would lead to serious and irreparable damage. The disclosure of information previously kept secret would not necessarily lead to irreparable damage, and in any event, Microsoft had failed to show that use of the information by competitors would lead to its dilution.

Several issues arise from the Commission's decision. It is not the intention of this Article to predict the outcome in the *Microsoft* appeal, but to explore some of the competition law principles which govern this area. In particular, this Article will examine the interpretation of the notions of "indispensability" and the "special responsibility" of a dominant undertaking, in the context of the special characteristics of high technology markets. It will be argued that the Commission's approach to these issues in *Microsoft* is focused on the "distortion of market structure" rather than foreclosure and anticompetitive effects. This European approach also differs from the way these issues have been addressed in U.S. antitrust law, which may have potentially adverse consequences for consumer welfare in high technology markets.

While this "structuralist" approach may be more consistent with "ordoliberal" concerns[11] about the exercise of private economic power by dominant firms, it is arguably not consistent with the European Commission's Discussion Paper on the Application of Article 82 (2005), (Discussion Paper),[12] which has called for a "more economic"[13] and "effects based"[14] approach and has characterized the object of article 82 as "the protection of competition on the market as a means of enhancing consumer welfare and of ensuring an efficient allocation of resources."[15]

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11. Gerber describes the theoretical underpinnings of EC competition law as originating in the ideas of German ordoliberalism. Ordoliberalism is a combination of the Chicago School's faith in the market, economic liberalism, and preference for private rather than government decisionmaking, together with a distrust of large amounts of economic power in private hands. There is a need to control both the state and private power. *See generally* DAVID J. GERBER, LAW AND COMPETITION IN TWENTIETH CENTURY EUROPE, PROTECTING PROMETHEUS (1998).

12. DG Competition Discussion Paper on the Application of Article 82 of the Treaty to Exclusionary Abuses (Dec. 2005) (EC), *available at* http://ec.europa.eu./comm/competition/antitrust/others/discpaper2005.pdf [hereinafter Discussion Paper].

13. In announcing the review of article 82, Philip Lowe, EC Director General of Competition, stated, "A credible policy on abusive conduct must be compatible with mainstream economics." Philip Lowe, Speech Delivered at the Thirtieth Annual Conference on International Antitrust Law and Policy, Fordham Antitrust Conference 2 (Oct. 23, 2003); *cf.* Economic Advisory Group, *An Economic Approach to Article 82* (July 2005), *available at* http://ec.europa.eu/comm/competition/publications/studies/eagcp_july_21_05.pdf.

14. In applying article 82, the Commission "will adopt an approach which is based on the likely effects in the market." Discussion Paper, *supra* note 12, para. 4. Neelie Kroes, the Competition Commissioner, stated that the aim was to "develop and explain theories of harm on the basis of a sound economic assessment." Neelie Kroes, Competition Comm'r, *Preliminary Thoughts on Policy Review of Article 82*, Speech at the Fordham Corporate Law Institute, 2 (Sept. 23, 2005) ("I am convinced that the exercise of market power must be assessed essentially on the basis of its effects in the market . . . .").

15. Discussion Paper, *supra* note 12, paras. 4, 54. The Discussion Paper does not adopt a consistent approach to these issues, however.

I. THE DUTY TO SUPPLY IN EC LAW

In the EC, the duty to supply interoperable information generally arises under article 82 as a special category of the application of the rules governing a "refusal to supply." Over a series of court and Commission decisions, a number of sometimes incoherent or inconsistent principles have emerged.[16] These principles also vary in their application depending on whether the product or service to which the applicant requires access can be classified as an "essential facility" or comprises intellectual property rights.

In contrast to the situation under U.S. antitrust law,[17] there is no general right under EC law for a trader to refuse to deal. The Court of First Instance in *Bayer AG v. Commission* acknowledged, however, that the case law of the Court of Justice (ECJ) "indirectly recognizes the importance of safe-guarding free enterprise . . . where it expressly acknowledges that even an undertaking in a dominant position may, in certain cases, refuse to sell."[18]

In *Commercial Solvents v. Commission*, which concerned a dominant supplier of raw materials who wanted to enter the downstream manufacturing market itself, the court stated that

> an undertaking which has a dominant position in the market in raw material and which, with the object of reserving such raw materials for manufacturing its own derivatives, refuses to supply a customer, which is itself a manufacturer of these derivatives, and therefore risks eliminating all competition on the part of this customer, is abusing its dominant position.[19]

In *Oscar Bronner v. Mediaprint* the ECJ set out the following principles for a refusal to supply: (1) the refusal must be likely to eliminate all competition in the relevant market, (2) the service in itself must be indispensable to carrying on that person's business (inasmuch as

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16. These principles have been well traversed in the literature and so will only be dealt with briefly here, before examining how they apply in the interoperability context.

17. A trader has a general right to refuse to deal under U.S. antitrust law. United States v. Colgate, 250 U.S. 300 (1919).

18. Case T-41/96, Bayer AG v. Comm'n, 2000 E.C.R. II-3383, 4 C.M.L.R. 4 (2001), para. 180. In Case C-7/97, *Oscar Bronner GmbH & Co. KG v. Mediaprint*, 1998 E.C.R. I-7791, 4 C.M.L.R. 112 (1999), Advocate General Jacobs also stated at paragraph 56: "First, it is apparent that the right to choose one's trading partners and freely to dispose of one's property are generally recognized principles in the laws of the Member States, in some cases with constitutional status. Incursions on those rights require careful justification." The EC in its Discussion Paper also states that undertakings "are generally entitled to determine whom to supply and to decide not to continue to supply certain trading partners." Discussion Paper, *supra* note 12, para. 207.

19. Cases 6 and 7/73, Istituto Chemioterapico Italiano SpA & Commercial Solvents Corp. v. Comm'n, 1974 E.C.R. 223, 1 C.M.L.R. 309, para. 25; *cf.* Case 311/84, Télémarketing v. CLT & IPB, 1985 E.C.R. 3261, para. 27.

there is no actual or potential substitute), (3) it must be economically unviable for competitors to replicate the asset, and (4) the refusal must be incapable of being objectively justified.[20]

Special circumstances arise if the refusal to supply involves intellectual property rights. In these cases the court must balance the incentive to innovate, protected by the intellectual property right, over the promotion of competition in the market. The way in which this has been dealt with under EC law,[21] in line with other jurisdictions,[22] is that it is not the possession, but the abuse of the intellectual property which attracts the application of the provision.[23] If the right is exercised in such a way as to pursue an aim manifestly contrary to the objectives of article 82, then it is no longer being exercised according to its essential function and Community law prevails over any use of intellectual property law.[24]

In deference to the intellectual property right, the courts have required "exceptional circumstances" before a "refusal to supply" will be abusive.[25] In *Radio Telefis Eireann v. Independent Television Publications* (*Magill*),[26] three television companies broadcasting in the UK and Ireland refused to licence copyrighted material which was the only source of program-scheduling information required to produce a single weekly publication. The refusal to licence was found to be an abuse of article 82 by the European Court of Justice because the material was the indispensable raw material for compiling a weekly television guide.[27] It prevented the appearance of a new product for which there was consumer demand[28] and eliminated all competition in this secondary market, for which there was no justification.[29]

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20. *Oscar Bronner*, 4 C.M.L.R. 112 (1999), para. 41.
21. Once the initial question of "dominance" has been determined.
22. *See generally* Herbert Hovenkamp, Mark D. Janis & Mark A. Lemley, *Unilateral Refusals to License*, 2 J. COMPETITION L. & ECON. 1 (2006).
23. In principle, the protection of the specific subject matter of an intellectual property right, whether it be a trademark, patent, or copyright is to entitle the right holder to reserve the exclusive right of its use. Case 238/87, AB Volvo v. Erik Veng, 1988 E.C.R. 6211, 4 C.M.L.R. 122 (1989); Case 53/87, CICCRA & Mixicar v. Renault, 1988 E.C.R. 1869, 4 C.M.L.R. 265 (1990).
24. Cases T-69/70/89 and 76/89, RTE, ITP, BBC v. Comm'n, 1991 E.C.R. II-485, 4 C.M.L.R. 586 (1991), para. 71.
25. Cases C-241-241/91 P, RTE & ITP v. Comm'n, 1995 E.C.R. I-743, 4 C.M.L.R. 718 (1995), para. 50; Micro Leader v. Comm'n, 1999 E.C.R. II-3989, 4 C.M.L.R. 886 (2000).
26. 1995 E.C.R. I-743, 4 C.M.L.R. 718 (1995).
27. *Id.* para. 53; *cf.* Case T-504/93, Tierce Ladbroke SA v. Comm'n, 1997 E.C.R. II-923, 5 C.M.L.R. 309 (1997), para. 131.
28. *RTE & ITP*, 1995 E.C.R. I-743, para. 54.
29. *Id.* paras. 55-56.

In *IMS Health v. NDC Health*,[30] a case decided after *Microsoft*, IMS Health, which collected data on pharmaceutical sales and prescriptions, refused to licence to competitors its copyrighted format ("brick structure") for processing regional pharmaceutical sales data to enable them to compete in the same data provision market. On a reference from a German Court under article 234, the European Court of Justice confirmed that the *Magill* requirements, including the condition that it prevented the appearance of a "new product,"[31] were cumulative elements of a refusal to licence under article 82.[32]

The Commission's Discussion Paper does not present a single standard for the assessment of a refusal to supply.[33] Rather, it adopts variable tests according to whether the refusal involves an existing supply relationship, the refusal to supply an input, an intellectual property right, or information for interoperability.[34]

The lower standard of the "refusal is likely to have a negative effect on competition"[35] and is preferred to the "risk of elimination of competition" in the case of an existing supply relationship. The refusal to supply is presumed to have a negative effect on competition if the input owner is itself active in the downstream market.[36] It also permits efficiencies to be invoked as a possible defence to exclusionary conduct.[37]

Several principles emerge from this brief review of the EC law on refusal to supply. The criteria of "indispensability," "risk of elimination of competition," and the absence of an "objective justification" were applied to the refusal to supply interoperability information in the *Microsoft* case. To the extent that Microsoft argued that some of the information to be supplied was subject to intellectual property rights, the *Magill* and *IMS Health* requirement of the emergence of a "new product" in a "secondary market" was not invoked. Instead, the Commission applied a test involving incentives to innovate.[38]

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30. Case C-418/01, IMS Health GmbH & Co OHG v. NDC Health GmbH & Co. KG, 2004 E.C.R. I-5039, 4 C.M.L.R. 28 (2004).

31. The "new product" criterion was included notwithstanding the Commission's view that it was not an essential requirement and its absence from the *Bronner* criteria. NDC Health/IMS: Interim Measures, 2002 O.J. (L 59/18), 4 C.M.L.R. 111 (2002), para. 180.

32. *IMS Health*, 4 C.M.L.R. 1543 (2004), para. 38.

33. Discussion Paper, *supra* note 12, para. 210.

34. *Id.* paras. 241-242.

35. *Id.* para. 218.

36. *Id.* paras. 222, 232.

37. *Id.* paras. 77, 84-92.

38. *Id.* para. 77.

II. HIGH TECHNOLOGY MARKETS AND COMPETITION LAW

Before examining the Commission's approach to the refusal to supply interoperability information, it is important to examine the particular market context where this issue arises. Particularly, the question arises whether the characteristics of these high technology markets have any implications for the operation and effectiveness of competition law.

High technology markets are characterised by "network effects" where consumers derive utility from the number of other consumers who choose the same product.[39] This is termed a *direct* network effect. *Indirect* network effects arise through the sale of complementary goods.[40] Users attach higher utility to an operating system that has a number of applications that run on that platform. Similarly, the higher number of users for an operating system platform the greater the attraction for software developers to write applications for that platform (known as a positive feedback). In economic terms, these are "two-sided markets" because platform producers must attract both users and software developers.[41]

One consequence of network effects is that where a single standard emerges as dominant, because a sufficient number of users have adopted it, the market is "tipped" to a particular product. One producer therefore tends to dominate the market: the "winner takes all."[42] There is clearly an advantage and potentially huge reward for being first on the market (the "first-mover" with a product). This is particularly the case if the product becomes the "standard" or "gatekeeper" for the interconnectivity of complementary products.

These markets are therefore characterised by firms with large market shares or by monopolies. Prices and profitability can be high

39. For a discussion of high technology markets, see generally STAN J. LIEBOWITZ & STEPHEN E. MARGOLIS, WINNERS, LOSERS & MICROSOFT: COMPETITION AND ANTITRUST IN HIGH TECHNOLOGY (1999); Note, *Antitrust and the Information Age: Section 2 Monopolization Analyses in the New Economy*, 114 HARV. L. REV. 1623 (2001); Richard A. Posner, *Antitrust in the New Economy*, John M. Olin Law & Economics Working Paper No. 106 (2000), http://papers.ssrn.com/paper.taf?abstract_id=249316; CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY (1994); MASSIMO MOTTA, COMPETITION POLICY, THEORY AND PRACTICE 82-85 (2004).

40. *See generally* Gregory J. Werden, *Network Effects and Conditions of Entry: Lessons from the Microsoft Case*, 69 ANTITRUST L.J. 87 (2001); M.A. Lemley & D. McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479 (1998).

41. Roberto Pardolesi & Andrea Renda, *The European Commission's Case Against Microsoft: Kill Bill?*, 27 WORLD COMPETITION 513, 527 (2004).

42. Competing incompatible standards can also co-exist in a market, e.g., PlayStation and X-Box.

because, while innovation costs are high, technology is easily reproduced and marginal costs are low. Dominance in these industries does not, however, always mean an absence of competition. Some economists, often relying on a neo-Schumpeterian approach,[43] argue that these markets function differently from traditional "smoke stack" industry markets and are characterized by rapid innovation and paradigm shifts. Because the potential rewards are great, competitors invest huge amounts in innovation both to develop new products and in order to dislodge the incumbent. Competition occurs "for the market" rather than "within the market" resulting in fragile, temporary, and serial monopolies. Competition is often not on price but on innovation, as competitors try to dislodge the incumbent monopolist with a new technology.[44] High prices are therefore not merely a reflection of high levels of investment, but they are also an acknowledgment that if monopolies are fragile and easily replaced, the timeframe for recoupment of these high investment costs may be relatively short.[45] On the other hand, the power to dislodge may be constrained by the installed base of customers of the existing monopolist who may be subject to lock-in and market inertia by high switching costs[46] (which are partly based on the number of complementary goods which interconnect with the existing product).[47]

These phenomena give rise to debates about the efficiency of markets and the quality of high technology products, e.g., is the product desirable and desired because it is the best on the market, the sole survivor "because of" superior skill, foresight,[48] or has it achieved its market position merely as a result of being the "first-mover" and becoming the industry standard and gatekeeper? Does it retain its market

43. Schumpeter argued that some monopoly power could be tolerated and that the most effective type of competition arises "from the new commodity, the new technology, the new source of supply . . . competition . . . which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives." JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 84 (3d ed. 1950).

44. For example, the replacement of VCRs with DVDs.

45. MOTTA, *supra* note 39, at 85.

46. Users may have sunk costs invested in time and money contributing to inertia in switching to another system.

47. Software markets do not always exhibit lock–in, high switching costs, and inertia. Liebowitz and Margolis argue that network effects do not play a large part in the Internet browser market, which was at the basis of the U.S. *Microsoft* case, because: (1) individuals are not concerned about what browser others use, compatibility with previous versions is not likely to be very important, (2) browsers are usually distributed freely (including upgrades which can be easily downloaded), and (3) switching to a new browser does not require a great deal of learning and favourite sites are easily ported to a new browser. Liebowitz and Margolis concluded that Internet Explorer's increase in market share (at the expense of Netscape) was due to consumer choice rather than inertia and lock-in. LIEBOWITZ & MARGOLIS, *supra* note 39, at 220-23.

48. *See* United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (1945).

position due to lock-in and high switching costs (path-dependant behaviour) rather than quality? "[I]t may not have achieved monopoly; monopoly may have been thrust upon it."[49] These network characteristics of high technology industries may have implications for the application of competition law. However, further refinement is necessary. As Posner has argued: "The fact that a monopolist buttressed by network externalities may be hard to dislodge even by a firm with a superior technology has no antitrust significance in itself."[50]

Is the refusal to supply interoperability information an "abuse of market power" whereby the firm is preserving and extending its monopoly position through tactics other than competition on the merits? On the other hand, it might be characterized as merely the response of a potentially fragile monopoly that wishes to recoup its investment (whether or not as a return on an intellectual property right) as quickly as possible. If monopoly or dominance is the most common outcome in these markets, should we be wary of imposing onerous duties on these monopolists, especially when they are fragile and liable to be displaced? This is especially so when the dynamic nature of the market makes predatory strategies expensive and outcomes unpredictable.[51]

Is competition law a rather blunt instrument to deal with these complex issues? As Posner has pointed out, "The possible effect of network externalities in discouraging subsequent innovation (the 'path dependence' problem) not only is speculative, but is operative even if the monopolist is passive, in which event there would be no arguable antitrust violation."[52] Many producers, if they wish to remain competitive, need to develop products which are compatible with those of the dominant supplier, which in turn gives rise to the requirement of interconnectivity.[53] Single standards and a high degree of product

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49. *Id.*

50. RICHARD POSNER, ANTITRUST LAW 250 (2d ed. 2001).

51. Veljanovski argues that the Commission has been too ready to prevent mergers in the telecommunications and media industry because of concerns about dominance arising from network effects in narrowly drawn markets, rather than acknowledging that networks often compete and have a high degree of interconnectiveness that offers consumer benefits and efficiencies. Cento Veljanovski, *EC Antitrust in the New European Economy: Is the European Commission's View of the Network Economy Right*, 22 E.C.L.R. 115 (2001).

52. Posner, *supra* note 39, at 9.

53. It is also important to observe that this phenomenon (of "path dependence") is not confined to high technology markets but is observable in any market with network characteristics. For example, a manufacturer of photocopiers has inherent power over his own brand of distinctive repair parts in the "aftermarket" for parts and repair service. In the United States Supreme Court decision, *Eastman Kodak Co. v. Image Technical Services*, Justice Scalia stated in his dissent that consumers, because of their capital investment, will tolerate some level of service-price increases before changing equipment brands and that this is necessarily true for "every maker of unique

integration can also have consumer benefits. How should the issue of "indispensability" be determined in a market characterised by tipping where access to a standard or gateway, by definition, will always be "indispensable to carry on business in the market," and where there is "no realistic actual or potential substitute," the test required by existing EC competition law? The firm will always be, according to the test in *Hoffman-La Roche*, an "unavoidable trading partner."[54] The answers will always depend on how the market is defined.

A. *The Determination of Market and Dominance in* Microsoft

The Commission in *Microsoft* took account of these network effects in its assessment of the issues of market definition and dominance. The markets were defined as operating systems for Intel compatible client PCs and the market for group server operating systems.[55] The client PC market excluded non-Intel operating systems and other operating systems on hand-held devices such as Blackberrys and mobile phones, which were thought not to provide sufficient competitive constraints.[56] There were significant barriers to entry (the so-called "applications barrier to entry") as a new entrant would need to convince a number of original equipment manufacturers (OEMs) to install it and develop a critical mass of software applications or convince other application writers to create for it.[57] The Commission also found that it was unlikely

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parts for its own products." 504 U.S. 451, 497-98 (1992). He noted that this merely amounts to "circumstantial" leverage and does not raise an antitrust concern because it is not attributable to market power in any relevant sense. *Id.* (citing PHILLIP AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 525.1b, 563 (2001)). It includes the leverage held by "an airplane manufacturer over an airline that has 'standardized' its fleet around the manufacturer's models." *Id.* at 497.

54. Case 85/76, Hoffman-La Roche v. Comm'n, 1979 E.C.R. 461, 3 C.M.L.R. 211 (1979), para. 41.

55. Eur. Comm'n, *supra* note 1, para. 333.

56. They were found to have limited functionalities in comparison with PC operating systems.

57. Eur. Comm'n, *supra* note 1, paras. 340, 453, 457-459. This "applications barrier to entry" was similarly considered in the United States Department of Justice suit against Microsoft. In that case, Microsoft claimed it could not be a barrier to entry because it had to face the same absence of compatible application programs when it entered the market. It had to encourage other software writers to develop products compatible with Windows. This argument was related to Stigler's view of barriers to entry as "a cost of producing . . . which must be borne by a firm which seeks to enter the industry but which is not borne by firms already in the industry." George J. Stigler, *Barriers to Entry, Economies of Scale and Firms Size*, *in* GEORGE J. STIGLER, THE ORGANISATION OF INDUSTRY 67 (1968). It was not accepted by the United States Court of Appeals for the District of Columbia, which stated that when Microsoft entered the market it did not face an incumbent with a large installed base. United States v. Microsoft Corp., 253 F.3d 34, 56 (D.C. Cir. 2001).

on the supply side for software developers to switch production to compete directly with the client PC operating system.

Microsoft was found dominant in the client PC market because the "positive feedback loop" operated as a significant barrier to entry.[58] It protects Microsoft's high market shares of up to ninety percent from effective competition by a potential new entrant.[59] The Commission acknowledged that the operation of network effects reinforced this dominance as consumers direct their purchases to the product that they believe will yield the greatest network gains.[60] Indirect network effects also operated to mean that as Independent Software Vendors (ISVs) develop to the platform that enables them to reach the highest number of users, the higher the number of users, the greater the number of ISVs that will write to that platform.[61] Microsoft was able "to determine to a large extent and independently of its competitors the set of coherent communications rules that will govern the *de facto* standard for interoperability in work group networks."[62]

The Commission also found a presumption of dominance for Microsoft in the market for group server operating systems where Microsoft had a fifty to sixty percent market share.[63] There was an absence of supply-side competitive pressures[64] and barriers to entry because a new vendor has to face network effects and other factors such as an established record as proven technology.[65]

But what is the operating test here in the determination of dominance? Is it the "passive" power which results from the network effect? Would dominance be established if the market were defined more broadly to include innovation markets and potential competition for the market? Would the interoperability information still be indispensable in this context?

The Commission considered and rejected the arguments that the traditional approach to market definition and dominance did not apply to new economy industries.[66] It acknowledged that the specifics of any

58. Eur. Comm'n, *supra* note 1, para. 429.
59. *Id.* para. 435.
60. *Id.* paras. 438, 464.
61. *Id.* para. 450.
62. *Id.* paras. 472, 779.
63. *Id.* paras. 499-514, 523. For criticism of the determination of the market share issue, see Pardolesi & Renda, *supra* note 41, at 543-47.
64. Eur. Comm'n, *supra* note 1, para. 400.
65. The Commission also found that Microsoft's behaviour in withholding interoperability information built an artificial barrier to entry in the market, reinforcing dominance. *Id.* para. 524.
66. *Id.* paras. 465-470.

particular industry must be taken into account,[67] but concluded that in this case the "specific characteristics of the market in question (for example, network effects and the applications barrier to entry) would rather suggest that there is an increased likelihood of positions of entrenched market power, compared to certain 'traditional industries.'"[68]

For the Commission, characteristics such as network effects and the control of the "de facto standard," which exaggerate dominance in narrowly construed markets, are not, as Posner has argued, reasons to be more suspicious of speculative claims of discouraging subsequent innovation and to be reticent in placing onerous duties on firms. Instead the Commission issued a call for greater vigilance and scrutiny of these industries. One begins to sense a different substantive emphasis in the American antitrust literature and the EU competition law approach.

B. The Determination of "Indispensability"

What are the implications of these findings of "market" and "dominance" in the context of high technology markets for the determination of elements of the refusal to supply? In *Microsoft*, the Commission placed a great deal of importance on its finding that the interoperability information was "indispensable" because it was "necessary for a work group server operating system vendor in order to viably stay on the market."[69] "Indispensability," as defined as "there is no realistic actual or potential substitute to it,"[70] is clearly dependent on how the market is defined. It is also subject to the relationship of that product or service to the output of the firm seeking access. The point at issue in *Commercial Solvents* was access to a physical input for the production process. But in what way can "indispensability" be applied in high technology markets?

In *Bronner*,[71] the applicant sought access to the existing newspaper distribution network of the dominant supplier. The question arose: should the competitor be granted access or be expected to develop its own distribution scheme? Advocate General Jacobs suggested that intervention to secure access is only necessary when duplication of the

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67. *Cf.* Case C-53/03, Syfait & Others v. Glaxosmithkline AEVE, 2005 E.C.R. I-4609, 5 C.M.L.R. 1 (2005). AG Jacobs stated that the question whether a refusal to supply was abusive is "highly dependent on the specific economic and regulatory context in which the case arises." *Id.* para. 68; *cf.* Discussion Paper, *supra* note 12, para. 214.

68. Eur. Comm'n, *supra* note 1, para. 470.

69. *Id.* para. 779.

70. *Id.* para. 585.

71. Case C-7/97, Oscar Bronner GmbH & Co. KG v. Mediaprint, 1998 E.C.R. I-7791, 4 C.M.L.R. 112 (1999).

facility is "impossible or extremely difficult owing to physical, geographical or legal constraints or is highly undesirable for reasons of public policy. It is not sufficient that the undertaking's control over a facility should give it a competitive advantage."[72]

The ECJ stated that other methods of distributing daily newspapers existed, even though they may be less advantageous:[73]

> Moreover, it does not appear that there are any technical, legal or even economic obstacles capable of making it impossible, or even unreasonably difficult, for any other publisher of daily newspapers to establish, alone or in cooperation with other publishers, its own nationwide home-delivery scheme and use it to distribute its own daily newspapers.[74]

This is important for questions of access to interoperability information in high technology cases because, as Posner points out, the primary concern for competition law in high technology "is with methods by which a firm that has a monopoly share of some market in a new-economy industry might seek to ward off new entrants."[75] Microsoft's ultimate concern may have been to prevent server companies from developing products which expose APIs that compete head to head or threaten to dislodge the Windows operating system monopoly. For competition law, the question is whether there are any technical, legal, or even economic obstacles capable of making it impossible, or even unreasonably difficult, for another software producer to enter and compete head to head with, or to replace, Microsoft as an upstream network.

To determine whether access is "indispensable," the court in *Bronner* had to look beyond the effect of the denial of access on the competitor. The ECJ stated that it was "not enough to argue that it is not economically viable by reason of the small circulation."[76] It inquired whether it was economically viable to create a second nationwide home-delivery network for a newspaper with a comparable circulation to allow it to compete on equal terms with the incumbent.[77]

A denial of access to interoperable information may "raise rivals costs" for the competitor but this does not necessarily make it

72. *Id.* para. 65.
73. *Id.* para. 43.
74. *Id.* para. 44.
75. POSNER, *supra* note 50, at 251.
76. *Bronner*, 1998 E.C.R. I-7791, para. 45.
77. *Id.* para. 68. The ECJ referred to the opinion of the Advocate General. *Id.* para. 46. The Discussion Paper, citing *Bronner*, defines a facility as "indispensable" when a second facility "is not economically viable in the sense that it would not generate enough revenues to cover its costs." Discussion Paper, *supra* note 12, para. 229.

"impossible" for another network to compete head to head with, or topple, the existing network. These questions are perhaps more difficult to determine in dynamic innovation markets because they concern possibilities and hypotheticals, rather than asking, as in *Bronner*, whether another physical distribution network for a newspaper of comparable size could enter the market.

The Commission in *Microsoft* applied *Bronner* to the question of "indispensability."[78] Microsoft argued that interoperability disclosures were not indispensable for its competitors in the work group server operating system market because the information was "commercially available" through mechanisms such as open industry standards, client-side software on the client PC, reverse engineering, and the U.S. Communications Protocols Licensing Program.[79]

The Commission rejected these as viable alternatives. Reverse engineering in particular was found to be costly, time consuming, and technically difficult, with uncertain chances of success.[80] The Commission rejected Microsoft's interpretation of *Bronner* that it was not enough to argue that alternatives are not economically viable. The Commission concluded that economic obstacles could constitute a relevant factor in establishing the indispensability of an input.[81] But this misconstrues the *Bronner* test. It also differs from the position in U.S. antitrust law. As Judge Easterbrook pointed out in the U.S. case of *Fishman v. Estate of Wirtz*: "Antitrust law does not relieve each would-be competitor of the need to build its own production facilities, if the market will support more than one."[82] "Economic obstacles" are clearly a

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78. Eur. Comm'n, *supra* note 1, para. 585.

79. *Id.* paras. 666-67. Microsoft launched the Communications Protocols Licensing Program (1st November 2002) making available interface information in response to its settlement with the United States Department of Justice. U.S. Settlement (paras. 273-74). New York v. Microsoft Corp., 297 F.2d 15 (D.D.C. 2003). The consent decree included an obligation of Microsoft to disclose interface information needed by Independent Software Vendors to achieve interoperability with the Windows operating system plus disclosure of information on the protocols used by Windows to communicate with server operating systems. The obligations imposed on Microsoft in the settlement went beyond the actual findings of abusive behaviour in that case. *See* David S. Evans, Albert L. Nichols & Richard Schmalensee, United States v. Microsoft*: Did Consumers Win?*, 1 J. COMPETITION L. & ECON. 497 (2005).

80. Eur. Comm'n, *supra* note 1, paras. 36, 685.

81. The Commission referred to the opinion of the AG in Case C-7/97, *Oscar Bronner GmbH & Co. KG v. Mediaprint*, 1998 E.C.R. I-7791, 4 C.M.L.R. 112 (1999), para. 46; Eur. Comm'n, *supra* note 1, para. 68.

82. 807 F.2d 520, 574 (7th Cir. 1986). In *Hecht v. Pro-Football, Inc.*, however, the requirement of "inability to reasonably duplicate" did not mean that the facility "not be indispensable; it is sufficient if duplication of the facility would be economically infeasible and if denial of its use inflicts a severe handicap on potential market entrants." 570 F.2d 982, 992 (D.C. Cir. 1977).

factor in determining "indispensability" but they should only be a decisive factor in *Bronner* if the market would not support more than one distribution scheme.

In *Microsoft*, opportunities were available to obtain the information. That these were costly did not, in itself, discount them as viable alternatives. "[C]ostly and time-consuming" and "technically difficult"[83] would only equate to "economically infeasible" if the market would not support a server which was interoperable with a competing operating system to Windows.[84] Perhaps the presence of the "applications barrier to entry" would mean that the Commission would come to the same conclusion, but at the very least it needs to ask the right questions, particularly to be consistent with other generally applicable principles of EC competition law.

The concept of "indispensability" is even more broadly interpreted by the ECJ in *IMS Health*. The ECJ determined that it was not necessary to distinguish an upstream from a downstream (secondary) market[85] but rather "it is sufficient that a potential market or even hypothetical market can be identified."[86] Further the court stated: "[I]t is determinative that two different stages of production may be identified and that they are interconnected, the upstream product is indispensable in as much as for supply of the downstream product."[87] Applying this definition, the brick structure in *IMS Health* was always going to "constitute, upstream, an indispensable factor in the downstream supply" of regional sales data.[88]

This interpretation by the ECJ in *IMS Health* expands the focus beyond a "market" to any input which is "indispensable" for another stage of production. As Geradin notes, the court suddenly no longer refers to the existence of an upstream "market" but of an upstream "product."[89] This potentially encompasses access to any gateway or standard which is by definition "indispensable" to the production of

83. Eur. Comm'n, *supra* note 1, paras. 36, 685.

84. The ECJ in *IMS Health* interpreted "economic obstacle" as meaning "that the creation of those products or services is not economically viable for production on a scale comparable to that of the undertaking which controls the existing product or service." Case C-418/01, IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG, 2004 E.C.R. I-5039, 4 C.M.L.R. 28 (2004), para. 28.

85. *Id.* para. 42.

86. *Id.* para. 44. Such is the case where the products or services are indispensable to carry on a particular business and where there is an actual demand for them in undertakings that carry on the business for which they are indispensable. *Id.*

87. *Id.* para. 45.

88. *Id.* para. 46.

89. Damien Geradin, *Limiting the Scope of Article 82 EC: What Can the EU Learn from the U.S. Supreme Court's Judgment in* Trinko *in the Wake of* Microsoft, IMS, *and* Deutsche Telekom*?*, 41 COMMON MARKET L. REV. 1519 n.40 (2004).

certain products if not always to a bundle of products or services defined within a market.[90] The reference to "hypothetical" or "potential" markets is also relevant to innovation markets where the outcomes are more likely to be speculative and unspecified. To avoid "false positives"[91] in the determination of a refusal to supply, the concept "indispensable" must be more clearly centred on the *Bronner* test which determines whether the market can support more than one network/facility.

C. The Degree of Participation

The *IMS Health* case is also instructive for high technology markets because it examines in what circumstances a "standard" may be considered "indispensable." The court stated that it was for the national court to determine if access to the "brick structure" was "indispensable." It added that the "high level of participation by the pharmaceutical laboratories" in the improvement of the brick structure, which "has created a dependency by users in regard to that structure, particularly at a technical level," had to be taken into account.[92] IMS set up a working group with industry participants and distributed the brick structures free of charge, a practice which "helped those structures to become the normal industry standard."[93] The high organizational and financial costs to users to acquire the data on the basis of another structure meant that

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90. In its Discussion Paper, for example, the Commission states that the indispensability requirement for intellectual property is met where it is not possible for competitors to turn to any workable alternative technology or "invent around" the IPR. "Such a requirement would likely be met where the technology has become the standard or where interoperability with the rightholder's IPR protected product is necessary for a company to enter or remain on the product market." Discussion Paper, *supra* note 12, para. 230.

91. As Hylton points out: "Recognition of the potential for error requires a consideration of the relative costs of erroneous findings of guilt or liability ('false convictions') and erroneous findings of innocence or nonliability ('false acquittals'). When the underlying conduct is procompetitive, lowering costs and prices in the long run, the costs of false convictions can be large." KEITH HYLTON, ANTITRUST LAW: ECONOMIC THEORY AND COMMON LAW EVOLUTION 189 (2003).

92. *IMS Health*, 2004 E.C.R. I-5039, para. 29. The "brick structure" was developed over many years in conjunction with clients; the "industry is now very highly dependent, to the extent that they consider it a de facto industry standard." *Id.* para. 184. But as Eleanor Fox argues, IMS consumers "participated in the creation of the IP and presumably had some power to protect themselves." Eleanor Fox, *A Tale of Two Jurisdictions and an Orphan Case: Antitrust, Intellectual Property, and Refusals to Deal*, 28 FORDHAM INT'L L.J. 952, 962 (2005).

The Discussion Paper also stresses the importance of "the degree of participation by users in the development" of the intellectual property and "the outlay, particularly in terms of cost, on the part of potential users." Discussion Paper, *supra* note 12, para. 30; *cf.* Steven Anderman, *Does the Microsoft Case Offer a New Paradigm for the "Exceptional Circumstances" Test and Compulsory Copyright Licenses Under EC Competition Law?*, 1 COMPETITION L. REV. 7, 16 (2004).

93. *IMS Health*, 2004 E.C.R. I-5039, para. 6.

finding or creating an alternative supplier would not be economically viable.[94]

The importance that *IMS Health* places on the "contribution by users" to a finding of "indispensability" has potential impact in high technology industries where proprietary software may have been subjected to extensive user testing and feedback.[95] O'Donoghue and Padilla argue that customer preferences should not by themselves make a facility essential or "indispensable." Applying *Bronner*, they argue that if "rivals can economically offer alternative facilities, the fact that some or all consumers prefer the dominant firm's facilities is irrelevant."[96] Standards developed through such participation are more likely to be efficient than those imposed by government or those developed in a "closed" format. If access is more likely to be imposed where "public participation" has occurred, will this discourage such cooperation?[97] Is the reverse also true? Does the absence of participation make it easier to say that the refusal to licence is not an abuse? None of these questions were examined in *Microsoft*.

The determination of narrow market definitions and exaggerated dominance in high technology markets has consequences for finding a duty to supply. The failure to consider the notion of "indispensability" within the context of whether the market can support more than one network/facility (or whether there is competition "for the market") in markets characterised by gateways and standards can result in "false positives" with potentially adverse implications for innovation and consumer welfare.

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94. *Id.* paras. 29-30. The Commission in its Discussion Paper also states that switching costs can be a strategic barrier to entry and, citing *IMS Health*, asserts that when determining the economic viability of alternatives for the question of indispensability in network industries, it is not just the cost to the competitor, but also "the switching costs that customers would have to incur in order to use an alternate structure." Discussion Paper, *supra* note 12, paras. 40, 229; *cf.* Donna M. Gitter, *Strong Medicine for Competition Ills: The Judgment of the European Court of Justice in the IMS Health Action and Its Implications for Microsoft Corporation*, 15 DUKE J. COMP. INT'L L. 153, 180 (2004).

95. Such as beta testing whereby software undergoes the last stage of testing prior to commercial release. It may involve sending it to user groups outside the company or allowing it to be offered as a free trial download.

96. ROBERT O'DONOGHUE & A. JORGE PADILLA, THE LAW AND ECONOMICS OF ARTICLE 82 EC 442 (2006).

97. This is particularly so because customer participation in intellectual property design is common and increases the value of the software. Gitter, *supra* note 94, at 178.

D. The Risk of Elimination of Competition

The Commission found that as a result of Microsoft's conduct there was a "risk of elimination of competition in the work group server operating system market."[98] It argued:

> Technologies that will lead to a further lock-in into Microsoft's products at the work group server and client PC level are quickly gaining traction in the market. The Commission's investigation has also produced evidence that establishes a causal link between the market evolution and the interoperability advantage enjoyed by Microsoft.[99]

The real question for competition/antitrust here should be whether this is indeed "abusive" conduct or merely the "passive" outcome of the direct and indirect network effects and even of "circumstantial" leverage.[100]

The Commission found that Microsoft wanted to leverage its power from the PC client market to the downstream server market. Relying on the principles enunciated in *Tetra Pak II*,[101] the Commission found that there were "strong associative links, both commercial and technological"[102] between the PC client and the server markets. Microsoft's dominance in the client PC market had a significant impact on the adjacent market for operating systems for work group servers. Microsoft's arguments that these links merely reflected the structure of a network system and played no leveraging role were rejected by the Commission.[103]

Microsoft argued that they had no incentive to leverage on the basis of the fallacy of "double counting" and the "one monopoly profit" theorem. In other words, Microsoft was already obtaining monopoly profits from its sale of Windows and it could not increase this amount

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98. Eur. Comm'n, *supra* note 1, para. 781. The ECJ in *IMS Health* refers to the test of excluding "any competition on a secondary market." 2004 E.C.R. I-5039, para. 38.

99. Eur. Comm'n, *supra* note 1, para. 781.

100. *See* Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 497-98 (1992) (Scalia, J., dissenting). AG Jacobs comments in *Bronner*, "[T]he mere fact that by retaining a facility for its own use a dominant undertaking retains an advantage over a competitor cannot justify requiring access to it." Case C-7/97, Oscar Bronner GmbH & Co. KG v. Mediaprint, 1998 E.C.R. I-7791, 4 C.M.L.R. 112 (1999), para. 57.

101. Case C-333/94, Tetra Pak v. Comm'n, 1996 E.C.R. I-5951, 4 C.M.L.R. 662 (1997).

102. Eur. Comm'n, *supra* note 1, para. 534.

103. *Id.* para. 539. Pardolesi and Renda argue that the case does not involve leverage as it mainly concerns server-to-server interoperability. The Commission requested that Microsoft disclose interface information in the server operating system market rather than the client PC market. Pardolesi & Renda, *supra* note 41, at 549. The Commission's focus on structure is apparent in its Discussion Paper where it states "the existence of network effects and economies of scale and scope may also be relevant to establish a foreclosure effect." Discussion Paper, *supra* note 12, para. 59.

through leverage into the downstream market.[104] The Commission rejected this argument stating that the assumptions underlying this theory, of perfect complements and fixed ratios, did not hold in this case.[105] The Commission argued that Microsoft's real intention was to protect its dominant position by reinforcing barriers to entry in the PC market.[106] Microsoft's real concern may have been that the market would shift from the client PC to become more server oriented (which ultimately also has implications for the relationship between the server market and the Internet).[107] It wanted to prevent entry into this market by "imposing its own proprietary technology as the *de facto* standard."[108] But the Commission, because of its interpretation of "indispensability," never examined Microsoft's conduct in the context of these possibilities.

What evidence did the Commission examine to determine the risk of elimination of competition and its impact on consumer welfare?[109] Consumer welfare was equated with "consumer choice." Under this characterisation, Microsoft's refusal had the effect of "stifling innovation in the impacted market and of diminishing consumers' choices by

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104. The argument is based on the view that there is only one monopoly profit to be made in a chain of production. The firm in a monopoly position cannot increase its profits by extending or leveraging that monopoly into a vertically adjacent market. *See generally* ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 141 (1978); POSNER, *supra* note 50, at 199-200; Ward S. Bowman, *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957). For example, one application of this theory could be that Microsoft's unwillingness to expand the downstream server market through the supply of interoperability information demonstrated an intention to "sacrifice profits" in order to gain a competitive advantage.

105. Eur. Comm'n, *supra* note 1, para. 765.

106. *Id.* para. 768. Lévêque argues that the dynamic model of the market allowed Microsoft to sacrifice its upstream short-term profit in order to reduce its rival's ability to compete in the future by leveraging into other areas of the server market. François Lévêque, *Innovation, Leveraging and Essential Facilities: Interoperability Licensing in the EU Microsoft Case*, 28 WORLD COMPETITION 71, 84 (2005). Peritz argues that the one monopoly profit theorem is inapplicable when we move away from static to dynamic networked markets because the "gains to tying increase in markets showing system effects, because expanding a customer base shifts the demand curve, increases the value of the bundle, and therefore permits an even higher price." Rudolph Peritz, *Re-Thinking* U.S. v. Microsoft *in Light of the EC Case*, NYLS Legal Studies Research Paper No. 04/05-4, at 5, http://ssrn.com/abstract=571803.

107. Eur. Comm'n, *supra* note 1, para. 775.

108. *Id.* paras. 771, 776.

109. Similarly in *Commercial Solvents* there was no real inquiry into the effect on competition on the downstream market. The customer may have been damaged or eliminated, but has all competition been eliminated? Does this prevent vertical integration on the part of a provider who may be able to produce the goods more efficiently? The ECJ did not inquire into these factors but rather emphasized the dominant undertakings ability to "control the supply to manufacturers" of an essential input and its refusal to supply an "existing customer." In what way, however, do these factors affect competition in the downstream market? Cases 6 and 7/73, Institute Chemistherapica Italiano SpA and Commercial Solvents v. Comm'n, 1974 E.C.R. 223, 1 C.M.L.R. 309 (1974).

locking them into a homogenous Microsoft solution."[110] Yet there are also consumer benefits to a single standard operating in both the Windows and server markets.[111] The Commission's approach is based on the preservation of "structure"[112] where consumers were affected "indirectly" because Microsoft's behaviour is "impairing the effective competitive structure in the market."[113] While structure can clearly affect outcomes, a focus on this issue alone without a closer examination of the impact of conduct on consumer welfare (and efficiency) is problematic in network environments and in competition law more generally. It can lead to "false positives" where procompetitive behaviour is incorrectly and inefficiently prohibited.

It could also be argued that there was not a real risk of elimination of competition in the downstream market. Microsoft asserted, for example, that the Linux work group server had experienced rapid growth downstream.[114] Pardolesi and Renda also assert that server markets do not raise monopoly concerns as they do not exhibit network effects, and different brand (open source and proprietary) technologies merge with the same system.[115] Switching costs are not significant and "tipping" is more unlikely.[116]

The evidence upon which the Commission relies to establish this impact on competition is also weak. There is a reliance on the views of competitors in "market surveys" and on decline in the market share of competitors in server markets. This could just as easily be consistent with "competition on the merits" as with an abuse of a dominant position. It could simply be the result of a properly functioning, competitive market. The Commission also placed importance on

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110. Eur. Comm'n, *supra* note 1, para. 782.

111. *See* Lévêque, *supra* note 106, at 85.

112. This approach is very much based on the structure—conduct—performance paradigm developed by Bain that market structure dictates performance and the need to protect small businesses against the predatory actions of larger firms. *See* JOE S. BAIN, BARRIERS TO NEW COMPETITION (1956).

113. Eur. Comm'n, *supra* note 1, para. 704. The Commission states, citing *Hoffman-La Roche*, that article 82 "covers not only abuse which may directly prejudice consumers but also abuse which indirectly prejudices them by impairing the effective competitive structure as envisaged by article 3(f) of the Treaty." Case 85/76, Hoffman-La Roche v. Comm'n, 1979 E.C.R. 461, 3 C.M.L.R. 211 (1979), para. 125.

114. Eur. Comm'n, *supra* note 1, para. 161.

115. Pardolesi and Renda argue that the facts did not disclose any real foreclosure of the server market as competitors did not exit and in any event the industry was adopting a different business model to recoup costs through aftermarkets with bundled hardware/software products and information technology services. Pardolesi & Renda, *supra* note 41, at 550 n.115.

116. Pardolesi & Renda, *supra* note 41, at 536-37.

"subjective intent"; this however lacks probity[117] for the establishment of anticompetitive abuse:[118]

> Microsoft's internal communication confirms that Microsoft's executives view interoperability as a tool in this leveraging strategy: "What we are trying to do is use our server control to do new protocols and lock out Sun and Oracle specifically . . . . Now, I don't know if we'll get to that or not, but that's what we are trying to do."[119]

The more appropriate question for competition law analysis is whether the conduct is likely to foreclose future competition "for the market." The Commission did attempt to examine this question by suggesting that Microsoft was ultimately concerned about the evolution of the market. But, as we have argued, the links were only made in a tenuous way. The ultimate findings of abuse were still narrowly focused on "indispensability" of the dominant market and not considered in the context of competition "for the market."[120] As Pardolesi and Renda have pointed out, disclosure of the information will likely steer the market from inter-system to intra-system competition.[121]

This is not to say that we can never raise antitrust concerns in these high technology markets. In the U.S. *Microsoft* case,[122] Microsoft's attempts to prevent Netscape's browser and Sun's Java from gaining dominance were driven by fear of competition from "middleware,"[123]

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117. As all competitive conduct is intended to exclude competitors, proof of subjective intent does not assist in identifying predatory conduct. *See* Olympia Equip. Leasing Co. v. W. Union Tel. Co., 797 F.2d 370, 379 (7th Cir. 1986); AA Poultry Farms Inc. v. Rose Acre Farms, Inc., 881 F.2d 1396, 1399 (7th Cir. 1989); BORK, *supra* note 104, at 160.

118. Abuse under article 82 is an "objective" concept. Case 85/76, Hoffman-La Roche v. Comm'n, 1979 E.C.R. 461, 3 C.M.L.R. 211 (1979), para. 91.

119. Eur. Comm'n, *supra* note 1, para. 778 (italics omitted). There is a narrow line between the legitimate supply of information and illegitimate collusion. As the United States Supreme Court pointed out in *Trinko*, "compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion." Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 408 (2004). Giving away too much information can also attract antitrust liability for phantom releases or "vapourware," which involves announcing the launch of a new product long before its effective availability on the market for the purpose of convincing end users to wait for a new product. This may discourage innovation and induce product development that is inoperable with rival software. Pardolesi & Renda, *supra* note 41, at 535 n.67.

120. The imposition of a duty to provide information (which the market would not otherwise provide) in the absence of a finding of abuse with respect to the replacement market, may even have the effect of strengthening the incumbent network, thereby entrenching an existing (perhaps even inferior) standard.

121. Pardolesi & Renda, *supra* note 41, at 552.

122. United States v. Microsoft Corp., 253 F.3d 34 (D.C. Cir. 2001).

123. "Middleware" software such as Netscape Navigator and Sun's Java expose their own APIs, which allows software to be used on computers with different operating systems as long as they also have the middleware software.

which could threaten its dominance through the development of a competing operating system. The findings of fact by Judge Jackson[124] and judgment of the United States Court of Appeals for the Federal Circuit[125] detail a litany of conduct by Microsoft which would arguably be found abusive whether or not they occurred in a high technology market. Microsoft had technologically integrated Windows with its Internet Explorer browser to make its removal difficult and contractually forced OEMs not to market or otherwise promote competing browsers by removing desktop icons or modifying the initial boot sequence. Microsoft also agreed with America OnLine, an Internet Access Provider, not to promote rival browsers in return for placing its icon exclusively on its Windows desktop. Microsoft induced important software vendors to make Java applications reliant on Windows-specific technologies and their virtual Java Machine, which were incompatible with Sun's Java, so the cross-platform aspirations for the software could not be achieved. Microsoft also wanted Intel to abandon efforts to develop a cross-platform system using Java, and threatened to support alternate processors if Intel did not cease. An examination of this conduct demonstrates that Microsoft did not rely solely on "network effects" and "lock-in" to preserve its monopoly, but engaged in calculated and sustained exclusionary conduct to preserve its monopoly from the threat of "middleware."

The Federal Circuit ultimately found that monopolists cannot be allowed "free reign to squash nascent, albeit unproven, competitors at will—particularly in industries marked by rapid technological advance and frequent paradigm shifts."[126] While this formulation still leaves open the questions of whether the threat is superior or even more efficient, or if consumer welfare would be better served by leaving it to the market, it is at least more clearly directed to the protection of "future competition."

III. INTELLECTUAL PROPERTY RIGHTS

Further important competition/antitrust issues are raised when the interoperability information is subject to intellectual property rights. As previously noted, "exceptional circumstances" are required before a duty to supply intellectual property rights will be imposed under EC competition law. Microsoft claimed intellectual property rights over

124. Issued on November 5, 1999, and Conclusions of Law on April 3, 2000.

125. *Microsoft*, 253 F.3d 34. *See generally* Evans, Nichols & Schmalensee, *supra* note 79; MOTTA, *supra* note 39, at 511-23.

126. *Microsoft*, 253 F.3d at 61.

some of the information requested as an "objective justification" for its refusal to supply.[127]

In *Magill* and *IMS Health* the ECJ required that the refusal to licence intellectual property prevent the emergence of a new product for which there was a potential consumer demand.[128] In *IMS Health*, a "new product" was defined as arising where an undertaking "does not intend to limit itself essentially to duplicating the goods or services already offered on the secondary market . . . but intends to produce new goods or services not offered by the owner of the right and for which there is a potential consumer demand."[129]

The concept is problematic and raises questions about how a new product is differentiated in quality and scope from existing products. It says little about consumer preferences that should dictate market definitions according to competition law principles.[130] Certainly in *IMS Health* it is difficult to determine that a new product was prevented by the refusal. Most importantly, the concept does not offer a justiciable standard for the identification of predatory conduct in the context of a refusal to licence because it cannot encapsulate all the circumstances where the intellectual property right is no longer being exercised according to its essential function.

It is also problematic to apply this criterion to a high technology market. The more relevant question is whether the market is conducive to future innovation. Microsoft asserted that its competitors merely wanted to offer the same products.[131] The Commission countered that the conduct prevented the development of enhanced server products through the development of additional features. Developments in innovation are always going to be speculative, however, and in any event the question remains: is an enhanced product a "new product"?

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127. Microsoft claimed that the requested information concerned the internal make-up of the Windows server operating system and thus went beyond interoperability information.

128. Case C-418/01 IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG, 2004 E.C.R. I-5039, 4 C.M.L.R. 28 (2004); Joined Cases C-241/91 P & C-242/91 P, RTE & ITP v. Comm'n, 1995 E.C.R. I-743, 4 C.M.L.R. 718 (1995).

129. *IMS Health*, 2004 E.C.R. I-5039, para. 49. It was left to the German Court whether the "new product" criteria was satisfied.

130. It is consumer preferences which are important, not what the court may decide is a new product. Lévêque, *supra* note 106, at 76.

131. As Areeda points out: "No one should be forced to deal unless doing so is likely substantially to improve competition in the marketplace by reducing price or by increasing output or innovation. . . . [This does not occur] when the plaintiff merely substitutes itself for the monopolist or shares the monopolist's gains." Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 852 (1990).

The Commission found that Microsoft's conduct constituted "exceptional circumstances" so that Microsoft's refusal could not be objectively justified merely by the existence of its intellectual property rights. The Commission, however, does not explicitly apply a "new product" requirement.[132] Instead, it balances the possible negative impact of an order to supply on Microsoft's incentives to innovate with the positive impact on the level of innovation of the whole industry. The Commission stated:

> [O]n balance, the possible negative impact of an order to supply on Microsoft's incentives to innovate is outweighed by its positive impact on the level of innovation of the whole industry (including Microsoft). As such, the need to protect Microsoft's incentives to innovate cannot constitute an objective justification that would offset the exceptional circumstances identified.[133]

This is not a particularly useful test for analysing the invocation of intellectual property rights in an antitrust context. Microsoft's incentive to innovate is what is protected by the grant of the intellectual property right and it should not be considered as an "objective justification."[134] The balance between Microsoft's incentive to innovate against the interests of innovation in the market as a whole (which is by definition negated by the exclusionary grant) has arguably already been taken into account with the grant of the intellectual property right.[135] In re-examining this issue in the context of the level of innovation in the industry as a whole, the Commission invoked a broader public policy argument (than that considered in intellectual property legislation) similar to the principles applied to "access to an essential facility" situations. The duty to licence should be considered by examining

132. The Commission did state, however, that if Microsoft's strategy were successful, "new products other than Microsoft's work group server operating systems will be confined to niche existences or not be viable at all." Eur. Comm'n, *supra* note 1, para. 700.

133. *Id.* para. 783. If the behaviour continued, it would risk eliminating all effective competition in the work group server operating system and the absence of competition would diminish Microsoft's incentives to innovate. *Id.* para. 725.

134. AG Jacobs makes a different although related point in *Syfait & Others v. Glaxosmithkline AEVE*, when he states that the two-stage distinction between abuse and its objective justification is somewhat artificial because once the abuse is determined, a negative conclusion has already been drawn. Case C-53/03, 2005 E.C.R. I-4609, 5 C.M.L.R. 1 (2005), para. 72.

135. It has been argued that the court intervened to grant licensing in both *Magill* and *IMS Health* because the copyright did not protect any real creative effort. It would be difficult for the court to make these assessments in each case, which in any event would detract from the protection granted by the statutory right. As Geradin argues, it is difficult to expect the law to correct the deficiencies of intellectual property law to determine what deserves protection. *See* Geradin, *supra* note 89, at 1528; *cf.* Motta, *supra* note 39, at 84 n.73.

"exceptional circumstances" which requires an inquiry into whether the right is no longer being exercised according to its essential function. As Lévêque states, examining this under "objective justification" shifts the onus of proof from the Commission to the owner of the right to show that the conduct does not reduce incentives to innovate.[136] This, together with the broad interpretation of "indispensability," will effectively mean that the imposition of a duty to licence will be the usual outcome in cases where the intellectual property constitutes a *de facto* standard.[137]

The Commission is attempting to weigh the positive effect (*ex post*) compulsory licensing will have on competition in the short run against the negative effect (*ex ante*) that this will have on long-run investment incentives.[138] This is a difficult task[139] and the unpredictability of outcomes where any *ex post* balancing occurs will have an undesirable effect on incentives to innovate.[140] As Geradin argues, however, licensing is often the practical outcome of this balancing process because the procompetitive effect of a grant of access is often more easily recognizable than the possible negative effect on *ex ante* incentives to innovate.[141]

As we have seen, the appropriate competition test for the abuse of intellectual property is an assessment of whether the right is no longer being exercised according to its essential function but is instead being used to achieve an anticompetitive purpose. In the United States, this will normally require that the unilateral refusal to licence involve some leverage and foreclosure of the downstream market.[142] If the monopolist does not compete downstream, it is unlikely that an abuse will be established because antitrust is hostile to claims which protect

136. Lévêque, *supra* note 106, at 91.

137. As Gitter argues, the value of intellectual property in the new economy "often derives from its interoperability as opposed to creativity." Gitter, *supra* note 94, at 181.

138. *Id.* at 180-81. The Commission's Discussion Paper notes that "[e]nforcement policy towards refusals to supply has to take into account both the effect of having more short-run competition and the possible long-run effects on investment incentives." Discussion Paper, *supra* note 12, para. 213.

139. Yet when dealing with the "media player" issue, the Commission accepts that it is ultimately for the market to determine the quality of the outcomes/products: "To maintain competitive markets so that innovations succeed or fail on the merits is an important objective of Community competition policy." Eur. Comm'n, *supra* note 1, para. 978.

140. As Bruce Owen argues, unclear judicial pronouncements have a damaging effect on incentives in the economy because "the link between the structure of law and the efficiency of economic activity is one of incentives that are based on expectations of what courts—or, more accurately, the legal system as a whole—will do in various contingencies." Bruce Owen, *Imported Antitrust: Review of Michal Gal, Competition Policy for Small Market Economies*, 21 YALE J. ON REGULATION 441, 442 (2004).

141. Geradin, *supra* note 89, at 1540.

142. Hovenkamp, Janis & Lemley, *supra* note 22, at 11.

competitors, not competition.[143] This approach is more firmly based on competition principles than the EC "new product" or "innovation balancing" tests which arguably do not give appropriate deference to the statutory right. Nor do they assist in distinguishing competitive from predatory conduct in traditional competition law terms.[144]

IV. HIGH TECHNOLOGY MARKETS AND THE ESSENTIAL FACILITY DOCTRINE

The broad interpretation of "indispensability" invoked in EU law for the imposition of a duty to supply interoperability information in markets which exhibit network/gatekeeper characteristics arguably relates more to a concern with the distortive effects the refusal will have on the structure of the market, than an inquiry into the anticompetitive purpose of the dominant undertaking. Thus, it could be argued that the imposition of the duty has much more in common with analyses under the essential facility doctrine as a special category of refusal to supply cases.

The essential facility doctrine involves the imposition of a duty to deal on a dominant (or monopolist) firm which controls a facility, which cannot be reasonably duplicated. In such cases, the denial of access can impede production or access to a downstream market.[145] The doctrine has most often been applied in situations relating to a utility or transport infrastructure which exhibits natural monopoly characteristics. It is impractical or unreasonable to require the competitor to duplicate the facility. These have included a railway bridge, electricity transmission grids, or terminal facilities, whether in public or private ownership.

The doctrine tends to focus more on the denial of the facility per se rather than on a full inquiry into the anticompetitive abuse or an investigation into "legitimate business purposes." The question becomes one of the feasibility of providing access which involves an objective

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143. *Id.* at 5.

144. The Commission's Discussion Paper merely includes the "new product" criterion as a manifestation of how the refusal to grant a licence "prevents the development of the market for which the licence is an indispensable input, to the detriment of consumers." Discussion Paper, *supra* note 12, para. 239. The refusal to licence may be abusive "even if the licence is not sought to directly incorporate the technology in clearly identifiable new goods and services. The refusal of licensing an IPR protected technology should not impair consumers' ability to benefit from innovation brought about by the dominant undertaking's competitors." *Id.* para. 240.

145. The four requirements of the doctrine under section 2 of the Sherman Act were set out in *MCI Communications Corp. v. AT&T Co.*, 708 F.2d 1081, 1132-33 (7th Cir. 1983): "control of the essential facility by a monopolist; a competitor's inability practically or reasonably to duplicate the essential facility; the denial of the use of the facility to a competitor; and the feasibility of providing the facility."

examination into the physical, technical, or safety capacity of the facility to provide access.[146]

The doctrine originated in the United States under section 2 of the Sherman Act,[147] but it is considered controversial.[148] In *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, LLP*, the United States Supreme Court again rejected its application noting that the Supreme Court has "never recognized such a doctrine."[149] Rather it is a term which has been applied to a number of lower court cases where facility-type access has been granted. The content and scope of the doctrine therefore remains uncertain and so-called "essential facility" cases can usually be explained under the general duty to deal or, where more than one firm is involved, it can be defined in antitrust terms, as a concerted practice or collective boycott.

In *Trinko*, the presence of a highly regulated federal and state statutory access regime in the telecommunications market was thought to "significantly diminish the likelihood of major antitrust harm"[150] of an access denial. This industry context made it unnecessary to impose a judicial doctrine of forced access under section 2 of the Sherman Act.[151] The Supreme Court stated that antitrust analysis must always be attuned to the particular structure and circumstances of the industry at issue, including awareness of the significance of regulation.[152]

In the EC, while only one Commission decision has mentioned the term,[153] something akin to this doctrine has been applied in a series of decisions.[154] The focus in these cases tends to be on the control and denial of the facility rather than on an inquiry into anticompetitive purposes/effects. The defence of "objective justifications" in these cases

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146. The fourth factor in *MCI* has been interpreted by courts for the proposition that "antitrust laws do not require that an essential facility be shared if such sharing would be impractical or would inhibit the defendant's ability to serve its customers adequately." Hecht v. Pro-Football, Inc., 570 F.2d 982, 992-93 (D.C. Cir. 1977).

147. *See* United States v. Terminal R.R. Ass'n, 224 U.S. 383 (1912); Otter Tail Power Co. v. United States, 410 U.S. 366 (1973); Associated Press v. United States, 326 U.S. 1 (1945).

148. *See generally* Areeda, *supra* note 131, at 852-53.

149. 540 U.S. 398 (2004).

150. *Id.* at 412.

151. *Id.* at 411.

152. *Id.* at 410-11. For a contrary EC determination of a grant of access to a private (with partial public ownership) enterprise that was subject to universal service obligations, see Commission Decision of 21 May 2003, Case COMP/C-1/37.451, 37.578, 37.579 (Deutsche Telekom AG), 2003 O.J. (L 263/9).

153. Sea Containers v. Stena Sealink—Interim Measures, 1994 O.J. (L 15/8), para. 66, n.6.

154. In *Sealink/B & I Holyhead: Interim Measures*, the duty arose in circumstances where competitors without access could not provide services to their customers, and access was refused or granted only on terms less favourable than those which it gave its own services, thereby placing the competitors at a disadvantage. 5 C.M.L.R. 255, para. 41 (1992).

tends to be confined to the physical capacity of the facility to provide access rather than on "legitimate business purposes."[155] It is this apparent departure from the more competitive safeguards against "false positives" under the general "refusal to supply" cases which has led to criticisms that the doctrine provides inadequate protection for the property rights of the facility owner and his or her legitimate returns on investment. These concerns are often countered with a public policy claim about the economic importance of these facilities. The doctrine developed in the United States in response to the need to regulate essential utilities and infrastructure, which were largely in private ownership. It was argued that a private monopolist, if in control of scarce resources or a natural monopoly, should bear some of the obligations of "fair and equal treatment" borne by publicly regulated utilities.[156] The focus on the industry or denial of the facility per se, without an inquiry into the purpose to injure competition, is justified on public interest grounds. Part of that public interest derives from the economic effect of such a denial. A refusal to permit access to an essential facility affects the competitive process far beyond the immediate market, as utilities usually form part of the economic infrastructure.[157] "Qualitatively, the monopolist does not 'produce' so much as he 'enables.'"[158]

Certainly in the EC, the doctrine has been applied in infrastructure industries such as telecommunications, airlines, and transport, where access to a physical infrastructure is thought crucial to the provision of essential services.[159] The public policy issues arise from the desire to foster competition in recently deregulated and liberalized markets which are dominated by former publicly owned monopolies.

A. *Standards and Access to Essential Facilities*

Is the Commission's decision in *Microsoft* and its focus on structure really an application of an essential facility doctrine? If so, is it correct to attach the same duties, which developed with respect to physical

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155. For example, in *Port of Rødby* it was not relevant whether the undertaking had an interest in downstream ferry services or not. Port of Rødby (Euro-port) v. Denmark, 1994 O.J. (L 55/52), 5 C.M.L.R. 457 (1994). The more prominence given in cases to "legitimate business purposes" rather than the more "objective" focus on the physical ability of the site to provide access, means that the doctrine is closer in application to the general principles of refusal to supply and lends support to the idea that a separate "essential facility" doctrine is both non-existent and unnecessary.

156. *See* LAWRENCE SULLIVAN, HANDBOOK OF THE LAW OF ANTITRUST 125 (1977).

157. Verizon Commc'ns v. Law Offices of Curtis V. Trinko, LLP, 504 U.S. 398 (2004).

158. David J. Gerber, *Rethinking the Monopolist's Duty to Deal: A Legal and Economic Critique of the Doctrine of "Essential Facilities,"* 74 VA. L. REV. 1069, 1074 (1988).

159. *See, e.g.*, Sea Containers v. Stena Sealink—Interim Measures, 1994 O.J. (L 15/8).

infrastructure, to the owner of a gateway/standard in the high technology industry[160] when monopoly characteristics are exaggerated but also, arguably, temporary and fragile?[161]

Can the public policy justifications, such as the importance of innovation, "end–to-end connectivity," the development of the European electronic framework[162] and freedom of expression[163] be used to ground the lack of focus on "objective justifications" or "legitimate business

160. In the EC, the essential facility doctrine has been applied to electronic financial services networks which lacked physical capacity constraints. In the *Clearstream* case, the Commission considered the primary clearing and settlement services for securities as an essential facility. There were network effects and tipping in this market and it was an unavoidable trading partner, new entry was also unrealistic in the foreseeable future. *See* Olga Sasinovskaya, Mobile Virtual Network Operators in Europe: Strategic and Legal Analysis 35 (June 3, 2004) (M.A. thesis, Lund University), http://www.fek.lu.se/Default.asp?id=4083 (search for "Sasinovskaya"; then follow "Abstract" hyperlink adjacent to author's name; then follow "Read thesis" hyperlink).

In France, an article 82 action against Apple, Inc., for its refusal to license its digital rights managements technology relating to its music download platform was dismissed by the French Competition Authority. The Authority did not apply the essential facility doctrine, finding that access was not indispensable to preserve competition on the downstream market for downloaded music because the technologies competed with each other and content could be provided by a number of online providers. Virgin had wanted access to this technology so that its downloaded music could be played on iPods in the same way as music is downloaded from iTunes. *See* Conseil de la Concurrence, Décision n° 04-D-54 du 9 novembre 2004 relative à des pratiques mises en œuvre par la société Apple Computer, Inc. dans les secteurs du téléchargement de musique sur Internet et des baladeurs numériques (Nov. 9, 2004), http://www.conseil-concurrence.fr/pdf/avis/04d54.pdf. For a discussion, see Giuseppe Mazziotti, *Did Apple's Refusal To License Proprietary Information Enabling Interoperability with Its iPod Music Player Constitute an Abuse Under Article 82 of the EC Treaty?*, 28 WORLD COMPETITION 253 (2005). France has now passed legislation opening up the iTunes technology to other providers. Delphine Strauss, *France Passes Law To Open Up iTunes*, FIN. TIMES, June 30, 2006, at 30, *available at* http://us.ft.com/ftgateway/superpage.ft?news_id=fto063020061416344830&page=1.

161. This fragility can be true of physical infrastructure as well. What may be considered a natural monopoly may change over time, especially in highly innovative industries. For example, local loop access in telephony markets may no longer have the same natural monopoly characteristics if mobile or wireless competitive constraints are now considered.

162. In 2002 the Commission introduced a new legal framework for electronic communications including the following Directives: The Framework Directive and the Access and Interconnection Directive. *See generally* Directive 2002/21/EC, 2002 O.J. (L 108/33); Directive 2002/19/EC, 2002 O.J. (L 108/7).

163. Boris Rotenberg argues that the control of platforms and standards in digital technology and the control of software code raises issues of fundamental rights to freedom of expression (art. 10, European Convention Human Rights (ECHR)) in addition to fundamental rights to property (art. 1, 1st Protocol ECHR). Interoperability and third-party access should also be looked at through the lens of the fundamental right to freedom of expression to "acknowledge software's unique hybrid (or dual) nature as both a means for expression, and expression in its own right." Copyright constrains the expression of complementary or competing expression while interoperability and "open source" facilitates this exchange. The regulation of intellectual property rights may have to take into consideration this freedom of expression in addition to software innovation. Boris Rotenberg, *The Legal Regulation of Software Interoperability in the EU*, Jean Monet Working Paper 07/05, at 7 (July 2005), http://www.jeanmonnetprogram.org/papers/05/050701.html.

purposes" here in the same way as policy arguments have been deployed for physical infrastructure industries? What effect does a grant of access have on investment in innovation, especially when the innovator often requires a partial (however temporary) monopoly in order to recoup investment?

In this context, the real question is whether the public policy considerations are better dealt with by regulation rather than competition law. As we have seen, the Commission acknowledges, like the Supreme Court in *Trinko*, that the specific regulatory factors of the industry must be taken into account before a competition remedy is imposed.[164] Microsoft argued that it was already disclosing sufficient information and that the Commission's finding would upset the "careful balance between copyright and competition policies" struck by the Software Directive.[165] Does the Software Directive better balance the public policy issues against other issues such as proprietary interests in software? In response to these public policy concerns, software vendors already agreed to establish open interoperability standards[166] and Internet protocols, such as TCP/IP that are maintained by industry consorta.[167]

Clearly the ownership of a *de facto* standard in a market where there is "tipping" and network effects will be lucrative. There may be a perceived need to regulate, in a similar fashion to an essential facility, to prevent the extraction of monopoly profits. As Anderman points out: "The theory is that there should be an appropriation of the value related to the invention, not the rewards of market power unrelated to the invention. Even under the assumptions of the IPR legislation, the return extracted can be excessive."[168]

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164. Port of Rødby (Euro-port) v. Denmark, 1994 O.J. (L 55/52), 5 C.M.L.R. 457 (1994).

165. Eur. Comm'n, *supra* note 1, para. 743. Microsoft also argued that a supply order would be inconsistent with the TRIPS agreement. *Id.* para. 1050.

166. Linux, for example, is an open-source operating system. Microsoft has also established a Customer Council on Interoperability to improve interoperability across its products. Press Release, Microsoft, Microsoft Establishes Customer Council on Interoperability (June 14, 2006), http://www.microsoft.com/presspass/press/2006jun06/06-13CustInteropCouncilPR.mspx.

167. The second element of the *Microsoft* case involved the tying of Media Player with Windows. Are there competing objectives in the case? The ECJ requested that Microsoft disclose interoperability information to promote connectivity. Windows incorporated its Media Player to promote access/connectivity to Internet sources and yet was required to unbundle.

168. STEVEN ANDERMAN, EC COMPETITION LAW AND INTELLECTUAL PROPERTY RIGHTS 248-50 (1998); *cf.* Mark R. Patterson, *Inventions, Industry Standards, and Intellectual Property*, 17 BERKELEY TECH. L.J. 1043, 1076 (2002).

B. Essential Facilities and "Objective Justification"

As the primary focus of the essential facility doctrine is the effect the denial of access has on market structure, once access has been granted the inquiry shifts to the "feasibility of providing the facility,"[169] which largely focuses on the physical capacity of the site to provide access where the scope for "objective justifications" is minimised. For example, in the Commission decision *Sealink/B & I Holyhead*, even efforts to make operations more efficient were not sufficient justification for denial of access to the port facilities:

> [T]he construction or the features of the facility are such that it is not possible to alter one competitor's service in the way chosen without harming the other's. . . . [E]ven if the latter's actions make, or are primarily intended to make its operations more efficient . . . such an undertaking is under a duty not to impose a competitive disadvantage upon its competitor in the use of the shared facility without objective justification.[170]

This has important ramifications for software markets. A dominant firm which owns a standard or controls interoperability information, like the owner of the facility who cannot alter his or her own schedule to the detriment of a competitor's service, may be restrained from developing software which might alter the connectivity of a competitor's software even if the developments are "primarily intended to make its operations more efficient."[171]

In the U.S. case of *Hecht v. Pro-Football Inc.*, the Federal Circuit interpreted the element of "feasibility of providing the facility" as "antitrust laws do not require that an essential facility be shared if such sharing would be impractical or would inhibit the defendant's ability to serve its customers adequately."[172]

Access to a "railway bridge" or "port" will ultimately be constrained by the physical capacity of the site[173] and the issue of congestion. But what limitations can be placed on access to

169. The fourth element of the doctrine as set out in *MCI Communications Corp. v. AT&T Co.*, 708 F.2d 1081 (6th Cir. 1983).

170. Sealink/B & I Holyhead: Interim Measures, 5 C.M.L.R. 255 (1992), para. 42; *cf.* Sea Containers Ltd./Stena Sealink, 1994 O.J. (L 15/8), 4 C.M.L.R. 84 (1995).

171. Sealink/B & I Holyhead: Interim Measures, 5 C.M.L.R. 255 (1992), para. 42.

172. 570 F.2d 982, 992-93 (D.C. Cir. 1977).

173. The Discussion Paper, for example, states that access may be denied if the facility is constrained and the substantial increase in cost would "jeopardize the economic viability of the facility holder." Discussion Paper, *supra* note 12, para. 234. In *Commercial Solvents*, the court dismissed concerns that production levels were not unlimited, as the supply to the customer only represented a small percentage of Commercial Solvents' global production of nitropropane. Cases 6 and 7/73, Istituto Chemioterapico Italiano SpA & Commercial Solvents Corp. v. Comm'n, 1974 E.C.R. 223, 1 C.M.L.R. 309 (1974), paras. 27-28.

interoperability information? Software is a durable, infinitely replicable and non-rival good.[174] When does the information have to be made available? Is the dominant firm obliged to update any later innovations? High technology markets which are characterised by rapid changes in innovation obviously raise entirely different considerations to physical facilities with finite capacities and, thus, for the application of the essential facility doctrine.[175]

As we have seen, the ECJ in *IMS Health* found that the "degree of participation by users" in the development of a standard or gateway was relevant to the determination of "indispensability." Does the level of participation therefore imbue the standard with some sort of "public character," making it more likely that the court will grant a licence? Is this conceptually similar to the essential facility doctrine where the private owners of facilities are expected to bear similar obligations to those imposed on publicly regulated utilities. As Benkler points out, the development of "open source" software and cooperative social behaviour operates outside the market where "the boundary of the firm becomes more porous. Participation in the discussions and governance of open source development projects creates new ambiguity as to where, in relation to what is 'inside' and 'outside' of the firm boundary, the social process is."[176]

What implications does this have for competition law? The Commission in *Sealink* mentions "use of a shared facility."[177] What makes it "shared" rather than "proprietary?" Does this status give rise to a more onerous duty?[178] Can this be applied to proprietary standards in the high technology industry?[179]

The access remedy imposed in essential facility cases is normally access on a "reasonable and non-discriminatory basis" to all customers

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174. Use by one agent does not reduce consumption by others. Lévêque, *supra* note 106, at 80.

175. The physical assets, for example, can be used as a form of rationing device. Unlike physical property, intellectual property cannot be used without disclosure and once "disclosed it is easily misappropriated, and thus its value is easily destroyed." Gitter, *supra* note 94, at 184.

176. YOCHAI BENKLER, THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM 125 (2006). "Consumers are changing into users—more active and productive than the consumers of the industrial information economy. The change is reshaping the relationships necessary for business success, requiring closer integration of users into the process of production . . . ." *Id.* at 126-27.

177. Sealink/B & I Holyhead: Interim Measures, 5 C.M.L.R. 255 (1992), para. 42.

178. The public character of the facility is important and may affect the court's decision as to who has ownership of the property. *Cf.* Gitter, *supra* note 94, at 179.

179. Could we also assume that software standards/gateways constitute a public space not just when there is actual participation by users but because of their relationship to freedom of expression? *See generally* Rotenberg, *supra* note 163.

rather than an order to supply a particular party. The remedy in *Microsoft* is certainly similar to that imposed in essential facility cases since the Commission demanded reasonable and non-discriminatory disclosure on a forward-looking basis to "any undertaking having an interest in offering work group server operating system products."[180]

Difficulties also arise with the imposition of behavioural remedies which may require court supervision. As Areeda points out: "No court should impose a duty to deal that it cannot . . . adequately and reasonably supervise."[181] This is even more apparent with the extremely technical nature of the interoperability information in *Microsoft* which must be supervised by the Monitoring Trustee.[182]

Microsoft was also permitted to obtain reasonable and non-discriminatory remuneration for supply of the information as long as the charge did not "reflect the 'strategic value' stemming from Microsoft's market power in the client PC operating system market or in the work group server operating system market."[183] This implies that Microsoft will not be permitted to charge the full monopoly price for its monopoly product, Windows. This may have repercussions for investment incentives.[184] The prohibition on price discrimination is also potentially detrimental as this is an important way in which investment is recouped and assets are fully exploited in dynamic and networked markets.[185]

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180. Eur. Comm'n, *supra* note 1, para. 1006 n.1265. Remedies must be proportionate and not go beyond what is necessary to achieve the objectives of this Treaty. EC Treaty art. 5(3).

181. Areeda, *supra* note 131, at 853. The United States Supreme Court in *Trinko* pointed out:

> Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill-suited. Moreover, compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion.

Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 408 (2004).

182. There have been lengthy and on-going discussions between Microsoft and the Commission involving highly complex technical information to determine whether sufficient information has been handed over to meet the order. On 12 July 2006, the Commission imposed a penalty of €280.5 million on Microsoft for non-compliance with its obligation to supply complete and accurate interoperability information. *See* European Commission, MEMO/06/277, 12 July 2006, http://ec.europa.eu/rapid/pressReleasesAction.do?reference=MEMO/06/277&format=HTML&aged=0&language=EN&guiLanguage=en.

183. Eur. Comm'n, *supra* note 1, para. 1008.

184. *See generally* Clear Commc'ns Ltd. v. Telecom Corp. of N.Z., (1993) 4 N.Z.B.L.C. 99-321; *cf.* Geradin, *supra* note 89, at 1545.

185. Microsoft may want to price discriminate to obtain a maximum return on its investment. Lévêque, *supra* note 106, at 88; *cf.* Veljanovski, *supra* note 51, at 118-19.

V. Disruption to Previous Levels of Supply

Another important aspect of the *Microsoft* decision was the importance the Commission placed on "the disruption of previous levels of supply" when assessing the abuse.[186] The Commission noted that Microsoft initially had an incentive to provide the interoperable information because it enhanced the value of their own products and their adoption as the industry standard.[187] Once its own products had gained dominance, its incentives changed and it held back access,[188] placing its "competitors at a strong competitive disadvantage."[189]

The importance of maintaining supply to a previous customer is a consistent theme in EC competition law. In *United Brands*, the ECJ stated that a dominant undertaking "cannot stop supplying a long standing customer who abides by regular commercial practice, if the orders placed by that customer are in no way out of the ordinary."[190] Similarly in *British Midland/Aer Lingus*, the Commission found that the withdrawal of a grant of interline facilities by the dominant airline deviated from an accepted industry practice and was objectively likely to have a significant impact on the other airline's ability to start a new service or sustain an existing service.[191] There was no objective justification for the withdrawal: "It is unlikely that there is such justification when the dominant airline singles out an airline with which it previously interlined, after that airline starts competing on an important route, but continues to interline with other competitors."[192]

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186. The Commission noted that this could constitute an "exceptional circumstance" when assessing levels of abuse. Eur. Comm'n, *supra* note 1, para. 556 (citing Cases 6 and 7/73, Istituto Chemioterapico Italiano SpA & Commercial Solvents Corp. v. Comm'n, 1974 E.C.R. 223, 1 C.M.L.R. 309 (1974)).

187. *Id.* paras. 732-33, 587. There is a market advantage in offering interoperability information due to "feedback effects": a dominant monopolist has an interest in ensuring that there are a number of complementary products which "interconnect" with its product.

188. *Id.* paras. 588, 734, 788.

189. *Id.* para. 589. There was a "general pattern of conduct" of disruption of previous levels of interoperability. *Id.* para. 1064.

190. Case 27/76, United Brands v. Comm'n, 1978 E.C.R. 207, 1 C.M.L.R. 429 (1978), para. 182; *cf.* Commission Decision of 8 Dec. 1977, Case IV/29.132 (Liptons Cash Registers/Hugin), 1978 O.J. (L 22/23). In *Syfait & Others v. Glaxosmithkline AEVE*, AG Jacobs stated that "exceptional harm to competition must be shown" when a dominant undertaking will be obliged to open up its facilities or licence its intellectual property rights to a third party for the first time. C-53/03, 2005 E.C.R. I-4609, 5 C.M.L.R. 1 (2005), para. 66.

191. Commission Decision of 26 Feb. 1992, Case IV/33.544 (British Midland Airways Ltd. v. Aer Lingus), 1992 O.J. (L 96/34), 4 C.M.L.R. 596 (1993).

192. *Id.* para. 26. Microsoft argued that this behaviour differed from its own, which was consistent with industry practice. Eur. Comm'n, *supra* note 1, para. 731.

This decision is also relevant because interlining services have network characteristics and the incumbent had "first mover" advantages. But was interlining "indispensable" to competition in the context of refusal to supply principles? As the Commission noted, the denial of interlining may impose "a significant handicap on a competitor by raising its costs and depriving it of revenue";[193] but does "raising rivals costs" equate to "indispensable," especially as the Commission went on to state that British Midlands was able to stay on the route notwithstanding the restrictions?[194]

How important to the identification of the abuse is the refusal to supply an "existing customer?" It is clearly largely irrelevant to the question of effect on competition in the market. As Lemley argues "[l]ocking companies into existing business relationships seems particularly inappropriate in fast-changing markets"[195] and it creates a disincentive to enter a supply agreement in the first place. Previous supply only becomes relevant if the previous practice was profit maximising and we can infer some anticompetitive motive from the firm acting against interest by its change in behaviour.

This is the approach to monopolisation adopted in the U.S. cases where the defendant's prior conduct is only relevant to the extent that it sheds light upon the motivation for the refusal to deal. One approach to this question is the "profit-sacrifice" test which examines the employment of business practices that would not be considered profit maximising except for the expectation that rivals are to be driven from the market or chastened.[196] In *Aspen Skiing Co. v. Aspen Highlands Ski Corp.*,[197] the Supreme Court found a dominant ski company's refusal to continue a joint venture with a rival to be anticompetitive. The change in pattern of behaviour or withdrawal from the scheme was contrary to the profit-maximising interests of the monopolist.[198] The Supreme Court in *Trinko* offered the following explanation of *Aspen*:

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193. The refusal to interline reduced flexibility for the customer who must purchase more than one ticket to interline and hindered the maintenance or development of competition when it imposed a significant cost on competitors. *Id.* paras. 28, 30.

194. The absence of focus on competitive effects may be linked to policy issues connected with the liberalisation of the air transport sector.

195. Hovenkamp, Janis & Lemley, *supra* note 22, at 30.

196. *Cf.* BORK, *supra* note 104, at 144; Steven C. Salop, *Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard*, 73 ANTITRUST L.J. 311 (2005).

197. Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585 (1985).

198. The defendant was unwilling to accept face value for the tickets in order to recreate the joint venture scheme. The United States Supreme Court cited Bork:

> In any business, patterns of distribution develop over time; these may reasonably be thought to be more efficient than alternative patterns of distribution that do not

> *Aspen Skiing* is at or near the outer boundary of § 2 liability. The Court there found significance in the defendant's decision to cease participation in a cooperative venture. The unilateral termination of a voluntary (*and thus presumably profitable*) course of dealing suggested a willingness to forsake short-term profits to achieve an anticompetitive end.[199]

If the conduct is rational (that is, profit maximising) only on the premise that it will destroy competition, then it should be condemned.[200] The antitrust question is whether the conduct can be explained in any way (efficiency, technological progress, competition on the merits) other than exclusion.[201] This is similar to the "no economic sense" test which requires proof that the challenged conduct would not be rational for the defendant absent a tendency to eliminate or lessen competition.[202]

In *Trinko*, the Supreme Court placed a great deal of emphasis on the absence, unlike *Aspen*, of a prior supply agreement:

> The complaint does not allege that Verizon voluntarily engaged in a course of dealing with its rivals, or would ever have done so absent statutory compulsion. Here, therefore, the defendant's prior conduct sheds no light

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> develop. The patterns that do develop and persist we may call the optimal patterns. By disturbing optimal distribution patterns one rival can impose costs upon another, that is, force the other to accept higher costs.

Id. at 604 (citing BORK, *supra* note 104, at 156).

199. Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 409 (2004) (internal citations omitted).

200. The United States Supreme Court in *Aspen* applied Bork's standard of monopolization: "[I]t is relevant to consider its impact on consumers and whether it has impaired competition in an unnecessarily restrictive way. If a firm has been 'attempting to exclude rivals on some basis other than efficiency,' it is fair to characterize its behaviour as predatory." *Aspen*, 472 U.S. at 605 (citing BORK, *supra* note 104, at 138).

201. Professor Hovenkamp explains:

> [d]ominant firm marketed or structured its product in a way that made it more difficult for rivals or potential rivals to sell their product, and if this marketing or restructuring was not reasonably necessary to improve the defendants own product, then it has violated § 2.

HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY § 6.4a, at 279 (3d ed. 2005). Is it "conduct which does not benefit consumers by making a better product or service available—or in other ways—and instead has the effect of impairing competition"? *Aspen*, 472 U.S. at 597.

202. *See* Andrew Gavil, *Symposium: Integrating New Economic Learning with Antitrust Doctrine—Exclusionary Distribution Strategies by Dominant Firms: Striking a Better Balance*, 72 ANTITRUST L.J. 3, 5 (2005). The "no economic sense" test was argued by the Solicitor General in a brief before the United States Supreme Court in *Trinko*. *See* Brief for the United States and the Federal Trade Commission as Amici Curiae Supporting Petitioner at 15, *Trinko*, 540 U.S. 398 (2004) (No. 02-682), 2002 WL 32354606; *see also* Gregory J. Werden, *Identifying Exclusionary Conduct Under Section 2: The "No Economic Sense" Test*, 73 ANTITRUST L.J. 413 (2005). Within this test business justifications may be examined but evidence demonstrating that the actor or firm did not have this state of mind is not enough to avoid liability. For a critique of the *Trinko* approach, see Eleanor Fox, *Is There Life in Aspen After* Trinko*? The Silent Revolution of Section 2 of the Sherman Act*, 73 ANTITRUST L.J. 153 (2005).

> upon the motivation of its refusal to deal—upon whether its regulatory lapses were prompted not by competitive zeal but by anticompetitive malice.[203]

The United States Supreme Court re-stated the long recognised right of a trader "to refuse to deal" with a rival and found that the limited circumstances where a refusal to cooperate with rivals raises antitrust concerns were not invoked in this case because "the services allegedly withheld are not otherwise marketed or available to the public."[204]

The EC's Discussion Paper on the reform of article 82 also places a higher duty on a firm that withdraws from a previous supply arrangement. A finding of a "risk of eliminating competition" is replaced by the lesser standard, where "the refusal is likely to have a negative effect on competition."[205] The requirement of indispensability is also not demanded in this case but is reserved for the case of refusal to supply an input.[206]

The Discussion Paper links this finding to the anticompetitive inferences (absence of efficiency) that have been drawn in the United States, noting that the previous supply indicated that the dominant company had "considered it efficient to engage in such supply relationships. This and the fact that its customers are likely to have made investments connected to these supply relationships create a rebuttable presumption that continuing these relationships is pro-competitive."[207] It is unclear, however, what importance should be placed on the customer "investments." It would seem to have little relevance to identifying any anticompetitive effect and surely the customer will have protected themselves by contract regarding any foreseeable risk.

This unfortunately was not the approach of the Commission in *Microsoft* or other EC refusal-to-supply decisions. The European competition law jurisprudence seems to give overwhelming importance to the fact that supply has been disrupted and competitors have been damaged, rather than a more appropriate focus on what this behaviour may indicate about possible anticompetitive motives. While the Commission in *Microsoft* did observe that the withdrawal of information coincided with Microsoft's obtainment of significant market share downstream, it arguably did not appropriately explore other possible

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203. *Trinko*, 540 U.S. at 409. Subsequent refusal to supply decisions under section 2 have limited its application to situations where there has been a change in a previous course of dealing, which some have argued has limited its effectiveness. *See* Fox, *supra* note 202, at 959.

204. *Trinko*, 540 U.S. at 410 (citing *Aspen*, 472 U.S. at 601).

205. Discussion Paper, *supra* note 12, para. 218.

206. *Id.* para. 224.

207. *Id.* para. 217.

justifications for this change in behaviour. The link between this conduct and wider questions concerning anticompetitive purposes is absent under this analysis.

VI. "SPECIAL RESPONSIBILITY"

One further feature of the EC decision in *Microsoft* is the importance the Commission placed on the "special responsibility," which was deemed to flow from Microsoft's monopoly position. The question was whether Microsoft "provides to its competitors in the work group server operating system market the interoperability information that it has a *special responsibility* to provide."[208]

The Commission relied on the oft-cited statement in *Michelin v. Commission* that a firm in a dominant position is "under a special responsibility not to engage in conduct that may distort competition."[209] Similarly in *Hoffman-La Roche*, the court pointed out that "as a result of the very presence of the undertaking in question, the degree of competition is weakened."[210]

This "special duty" does not disentitle a dominant firm from taking reasonable steps to protect its own commercial interests but it must act in a manner proportionate to its strength. The ECJ in *United Brands* stated: "Even if the possibility of a counter-attack is acceptable that attack must still be proportionate to the threat taking into account the economic strength of the undertakings confronting each other."[211]

In the final analysis, whether a dominant firm is held to a higher *a priori* duty, requiring it to act in proportion to its strength, or not, may not have a substantive effect on outcomes. The possession of market power clearly allows a firm to withhold output or increase price, but this, in itself, has never been an antitrust abuse.[212] A dominant firm's conduct is

208. Eur. Comm'n, *supra* note 1, para. 33 (emphasis added).

209. *Id.* para. 542 (citing Case 322/81, Michelin v. Comm'n, 1983 E.C.R. 3461, 1 C.M.L.R. 282 (1985), para. 57).

210. Eur. Comm'n, *supra* note 1, para. 543 (citing Case 85/76, Hoffman-La Roche, 1979 E.C.R. 461, para. 91).

211. Case 27/76, United Brands v. Comm'n, 1978 E.C.R. 207, para. 190; *cf.* BBI/Boosey & Hawkes: Interim Measures, 1987 O.J. (L 286/36), 4 C.M.L.R. 67 (1988). This approach is arguably distinguishable from the American "rule of reason" analysis, under section 1 of the Sherman Act, where there is no assumption of unequal bargaining power but merely a balancing of pro- and anticompetitive behaviour. *See* Cal. Dental Ass'n v. Fed. Trade Comm'n, 526 U.S. 756 (1999). A "rule of reason" analysis, which is usually reserved for section 1, was applied under section 2, appearing to unify section 1 and section 2 tests, in the court of appeals decision in *Microsoft*. United States v. Microsoft Corp., 253 F.3d 34, 84 (D.C. Cir. 2001).

212. While "excessive pricing" can amount to an abuse under article 82, the charging of a monopoly price attributable to market power is not an antitrust violation under section 2 of the Sherman Act unless it amounts to a price squeeze.

always going to have greater effect on the market than if the same conduct were pursued by a firm without dominance. The possession of market power therefore provides greater opportunities for the firm to engage in conduct that is more damaging to the competitive process and more likely to result in reduced output and higher prices.[213] Hence, conduct such as predatory pricing is only a rational strategy for a firm with market power because only a large firm is likely to be in a position to expand output and have the ability to recoup its investment.[214] This greater opportunity explains why the legislature demands that the behaviour of firms with market power be examined in more detail. As Justice Scalia noted in dissent in the United States Supreme Court decision in *Eastman Kodak v. Image Technical Services*: "Where a defendant maintains substantial market power, his activities are examined through a special lens: Behavior that might otherwise not be of concern to the antitrust laws—or that might even be viewed as procompetitive—can take on exclusionary connotations when practiced by a monopolist."[215] Likewise, the ECJ asks in *United Brands* "whether the dominant undertaking has made use of the opportunities arising out of its dominant position."[216]

If the court asks the correct competition law questions about whether the conduct has an anticompetitive purpose and foreclosure effect on the market, any "special duty" will be irrelevant to the determination of liability. On the other hand, if the court does not formulate the questions in this way and merely seeks to restrain the conduct of a monopolist, it may be punishing a firm for merely being in,

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213. "[S]ize carries with it an opportunity for abuse that is not to be ignored when the opportunity is proved to have been utilized in the past." United States v. Aluminum Co. of Am., 148 F.2d 416, 430 (1945) (citing United States v. Swift & Co., 286 U.S. 106, 116 (1932)).

214. *See generally* Brooke Group v. Brown & Williamson Tobacco Corp., 509 U.S. 209 (1993).

215. 504 U.S. 451, 488 (1992).

216. *United Brands*, 1978 E.C.R. 207, para. 249. *See generally* JONATHAN FAULL & ALI NIKPAY, THE EC LAW OF COMPETITION paras. 3.124-3.130, 3.131-3.135 (1999). It is not necessary, however, that the "abuse" be "caused" by or linked to the dominant position: "The interpretation suggested by the applicant that an abuse implies that the use of the economic power bestowed by a dominant position is the means whereby the abuse has been brought about cannot be accepted." Case 85/76, Hoffmann-La Roche v. Comm'n, 1979 E.C.R. 461, 3 C.M.L.R. 211 (1979), para. 9. It is only in the limited circumstances of leverage that the requirement to establish a linkage between the market power and the abuse is required. In *Tetra Pak II*, the ECJ stated, "[A]pplication of Article [82] presupposes a link between the dominant position and the alleged abusive conduct." Case C-333/94, Tetra Pak Int'l SA v. Comm'n (*Tetra Pak II*), 1996 E.C.R. I-5951, para. 27.

but not necessarily abusing, that dominant position contrary to competition law principles.[217]

According to the Commission, Microsoft not only had a "special responsibility," but its market share of over ninety percent placed it in a "quasi-monopoly" position, an "overwhelmingly dominant position."[218] The Commission, citing *Compagnie Maritime Belge v. Commission*,[219] referred to the concept of "superdominance,"[220] the "particularly onerous special obligation" attaching to undertakings which enjoy a "dominance verging on monopoly."[221] The scope of the special responsibility is considered in light of the special circumstances of each case.[222]

Whish notes that "if a dominant undertaking has a 'special' responsibility, a super-dominant has one that is even greater,"[223] but it is very difficult to identify exactly what duties attach to "special responsibility" and even more so for "superdominance." How do these duties manifest themselves in rules for the identification of predatory behaviour? As Appeldoorn notes, attaching greater duties to "superdominance" is confusing and sets the legal boundaries around such a firm based "on its size alone, and not on its behaviour."[224] Either a firm is dominant or not for the purposes of the application of article 82.[225]

The EC Discussion Paper also suggests that a higher duty is attached to "superdominance" where "the degree of dominance will be a relevant factor [in establishing foreclosure effects]. In general, the higher the capability of conduct to foreclose and the wider its application and the stronger the dominant position, the higher the likelihood that an anticompetitive foreclosure effect results."[226] Does this mean that "superdominance" sets up a rebuttable presumption of foreclosure? If so

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217. "[T]he Act does not mean to condemn the resultant of those very forces which it is its prime object to foster. . . . The successful competitor, having been urged to compete, must not be turned upon when he wins." *Aluminum Co. of Am.*, 148 F.2d at 430.

218. Eur. Comm'n, *supra* note 1, para. 435.

219. *Id.* at 120 n.560 (citing the Opinion of AG Fennelly that a firm enjoys a position of dominance approaching a monopoly in Joined Cases C-395/96 P & C-396/96 P, Compagnie Maritime Belge Transports SA v. Comm'n, 2000 E.C.R. I-1365, para. 137).

220. Eur. Comm'n, *supra* note 1, at 120 n.560. On the concept of "superdominance," see generally RICHARD WHISH, COMPETITION LAW 189-90 (5th ed. 2003).

221. Eur. Comm'n, *supra* note 1, at 120 n.560.

222. Case C-334/94, Tetra Pak Int'l S.A. v. Comm'n (*Tetra Pak II*), 1996 E.C.R. I-5951, para. 24.

223. WHISH, *supra* note 220, at 190.

224. Jochen Appeldoorn, *He Who Spareth His Rod, Hateth His Son? Microsoft, Super-Dominance and Article 82 EC*, 26 EUR. COMPETITION L. REV. 653, 656 (2005).

225. *Id.* at 657.

226. Discussion Paper, *supra* note 12, para. 59 (citing Joined Cases C-395/96 P & C-396/96 P, Compagnie Maritime Belge Transports SA v. Comm'n, 2000 E.C.R. I-1365, para. 119; Case T-228/97, Irish Sugar plc v. Comm'n, 1999 E.C.R. II-2969, para. 186).

how is this consistent with the stated "effects based" approach of the Discussion Paper? If it does not set up a presumption then what is the substance of the higher duty? Any assessment of the likely foreclosure will still be related to degree of market power,[227] making any presumption irrelevant and potentially confusing.

This approach is arguably one more manifestation of the importance of EC competition law appears to place on the distortion of market structure rather than on an assessment of the consumer-welfare effects of anticompetitive behaviour. As we have seen, such an approach is particularly problematic in network markets where dominant firms are common.

U.S. courts do not hold monopolists to a "special responsibility" under section 2 of the Sherman Act. What accounts for the difference in treatment under EC law, and does this difference have any effect in practice? Amato points out that the European concept of "special responsibility" of dominant firms has its origins in "fairness"[228] and imposes a seemingly public rather than a private law burden.[229] Gerber refers to the development of the "abuse" concept under article 82 in several refusal-to-supply decisions as consistent with the protection of small and medium-sized firms and the concern about "the ability of large firms to extract unfair prices and terms from smaller enterprises."[230] He notes the theoretical origins of EC competition law in ordoliberalism. He refers specifically to notions of "economic dependency" developed in German competition law where a supplier did not have "sufficient and reasonable possibilities" to shift to another purchaser. This included the concept of "relative dominance" where economic power was a problem even where there was no dominance of a market. Gerber notes: "If a firm was 'dependent' on another firm, the firm with this 'relative power' was in a position to harm or destroy the dependent, and thus it should be

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227. Discussion Paper, *supra* note 12, para. 91. The Discussion Paper's focus on "structure" is also apparent where it states that "the protection of rivalry and the competitive process is given priority over possible pro-competitive efficiency gains." For a firm at or near monopoly it is highly unlikely "that efficiency gains would be sufficient to counteract its actual or likely anti-competitive effects." *Id.*

This approach is not always consistent however. The Discussion Paper explains the conduct in question must have the capability, by its nature, to foreclose competitors from the market and to "establish such capability it is in general sufficient to investigate the form and nature of the conduct in question." *Id.* para. 58. The discussion shifts from a formalistic focus on "capability" to an examination of "conduct" and "foreclosure," from "special duties" to "outcomes."

228. GIULIANO AMATO, ANTITRUST AND THE BOUNDS OF POWER 66 n.2 (1997).

229. *Id.* at 66.

230. Gerber refers to *United Brands*, *Hoffman-La Roche,* and *Michelin*. GERBER, *supra* note 11, at 367-68; *cf.* AMATO, *supra* note 228, at 70.

prevented from abusing this power."[231] This notion of "economic dependency" is similar to the interpretation of "indispensability" (although applied to dominant undertakings) we have observed in cases involving gateways and standards.

This imposition of "special responsibility" and protection of small enterprises in the interest of "fairness" is inconsistent with the reform of article 82 and the renewed focus on "more economic" approaches and "effects."[232] Also, how does the scope of this "special responsibility" manifest itself in the context of interoperability information? To state that Microsoft must supply the "interoperability information that it has a special responsibility to provide"[233] collapses under its own circularity and does not specify a justiciable standard for, or an economic measure of, the scope of the duty.

Microsoft argued that it should not have any special duties beyond what is standard practice and that the withholding of interface information is common practice in the software industry. The disclosure sought by the Commission and those which it had to make under the U.S. Communications Protocols Licensing Program were exceptional. The Commission stated that behaviour by a dominant company which accorded with industry practice did not mechanically exculpate Microsoft.[234] What was considered "competition on the merits" for a

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231. GERBER, *supra* note 11, at 316. Gerber states that the concept was developed primarily by the economist Helmut Arndt in *Markt und Macht* (2d ed. 1973) and *Wirtschaftliche Macht* (3d ed. 1980). Gerber, *supra* note 11, at 316 & n.140.

232. *See* sources cited *supra* note 231. There are problems however with a purely "effects based" approach. As Balto and Nagata point out:

> [P]rice/output effects tests can yield a false positive. Even if there is evidence of elevated price or restricted output, that does not necessarily mean that the conduct in question was exclusionary. Monopoly power resides in both lawfully attained monopolies and those attained or maintained through exclusionary means. Any exercise of market power by a monopolist can be expected to result in elevated price or restricted output. Thus, an observation of elevated price or restricted output is insufficient to label the conduct exclusionary.

David Balto & Ernest Nagata, *Proof of Competitive Effects in Monopolization Cases: A Response to Professor Muris*, 68 ANTITRUST L.J. 309, 313 (2000).

233. Eur. Comm'n, *supra* note 1, para. 33.

234. *Id.* para. 732 n.877.

> It follows from the nature of the obligations imposed by Article 86 [article 82] of the Treaty that, in specific circumstances, undertakings in a dominant position may be deprived of the right to adopt a course of conduct or take measures which are not in themselves abuses and which would even be unobjectionable if adopted or taken by non-dominant undertakings.

Id. (quoting Case T-111/96, ITT Promedia v. Comm'n, 1998 E.C.R. II-2937, para. 139); *see* Case 322/81, Michelin v. Comm'n, 1983 E.C.R. 3461, para. 57; Case T-228/97, Irish Sugar plc v. Comm'n, 1999 E.C.R. II-2969, para. 112.

firm with little or no market power assumed a different character for a firm in a dominant position, and the "special responsibility that Microsoft did not sufficiently take into account when answering Sun's request derives from Microsoft's quasi-monopoly on the client PC operating system market."[235]

This approach also has implications for the imposition of a remedy. The Commission ordered that disclosure "should apply in a prospective manner to future generations of Microsoft's products. Accordingly, the disclosed information will have to be updated each time Microsoft intends to bring to market new versions of its relevant products."[236] But if liability arises from the "special responsibility" attaching to dominance or "superdominance," which turns otherwise legitimate behaviour into actionable anticompetitive behaviour, then we should also be aware that Microsoft may not always be in this position and can then presumably resume standard industry practice. The dynamic nature of innovation in high technology markets means that this market power can be eroded rapidly. This is especially true if the disclosure of the interoperability information achieves its purpose and Microsoft faces increased competitive pressure.

VII. U.S. CASE LAW ON "SPECIAL DUTIES" OF MONOPOLISTS AND INTEROPERABILITY

The EC approach where firms in a dominant position are held to a "special responsibility," however ill-defined, contrasts with that in the United States, where the courts have repeatedly held that a monopolist has "no special duties" under section 2 of the Sherman Act with respect to other market participants. In *Trinko*, the Supreme Court concluded that Verizon's alleged insufficient assistance in the provision of service to rivals was not a recognised antitrust claim under the Court's refusal to deal precedents as "there is no duty to aid competitors."[237] In particular: "Compelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities."[238]

235. Eur. Comm'n, *supra* note 1, para. 787.
236. *Id.* para. 1002.
237. Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 411 (2004).
238. *Id.* at 407-08.

There is no general duty to deal under U.S. law.[239] The test to be applied for monopolisation was established by the Supreme Court in *United States v. Grinnell Corp.*, i.e., "the possession of monopoly power in the relevant market and . . . the wilful acquisition[,] maintenance[, or use] of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident."[240]

The "no duty to aid competitors" approach can be traced to Chicagoan ideas concerning the "self-correcting" power of markets and the "cost of false positives." The notion that a monopolist should have to cooperate with its rivals, exercise any special restraint, or be held to a standard of behaviour that differs from other competitors was dismissed by Judge Posner in *Olympia Equipment Leasing Co. v. Western Union Telegraph Co.*:

> Opinion about the offence of monopolization has undergone an evolution. Forty years ago it was thought that even a firm with a lawful monopoly . . . could not be allowed to defend its monopoly against would-be competitors by tactics otherwise legitimate; it had to exercise special restraint . . . . Later, as the emphasis of antitrust policy shifted from the protection of competition as a process of rivalry to the protection of competition as a means of promoting economic efficiency, . . . it became recognized that the lawful monopolist should be free to compete like everyone else; otherwise the antitrust laws would be holding an umbrella over inefficient competitors. A monopolist, no less than any other competitor, is permitted and indeed encouraged to compete aggressively on the merits . . . .[241]

These ideas have been applied specifically in refusal-to-supply-information and interoperability cases. In *Berkey Photo Co. v. Eastman Kodak Co.*,[242] Kodak, which was in the business of both camera and film development, did not disclose the development of its new "Instamatic" cameras to companies who competed with Kodak in the downstream film market.[243] The introduction of the new cameras significantly

239. United States v. Colgate, 250 U.S. 300 (1919).

240. 384 U.S. 563, 570-71 (1966).

241. 797 F.2d 370, 375 (7th Cir. 1986) (internal quotations & citations omitted). Posner states:

> [N]ow that the *Alcoa* doctrine is discredited, it is understood that a monopolist is free to compete, whether against the competitive fringe in his monopoly market or against potential competitors, as vigorously as a firm in an ordinary competitive market would be, provided it doesn't employ tactics calculated to drive an equally or more efficient firm from the market.

POSNER, *supra* note 39, at 5 (citation omitted).

242. 603 F.2d 263 (2d Cir. 1979), *cert. denied*, 444 U.S. 1093 (1980).

243. *Id.*

damaged the business of competing producers who did not produce compatible film. An action was brought alleging that Kodak had leveraged its power in the camera market to obtain a competitive advantage in the downstream film market contrary to section 2 of the Sherman Act. The Court examined whether the conduct was "unreasonably restrictive of competition"[244] and stated:

> If a firm that has engaged in the risks and expenses of research and development were required in all circumstances to share with its rivals the benefits of those endeavors, this incentive would very likely be vitiated.
>
> Withholding from others advance knowledge of one's new products, therefore, ordinarily constitutes valid competitive conduct. . . . [A] monopolist is permitted, and indeed encouraged, by § 2 to compete aggressively on the merits . . . .[245]

The issue of a refusal to supply information arose again in the Federal Trade Commission's (FTC) 1998 complaint against Intel and the decision in *Intergraph Corp. v. Intel Corp.*[246] The FTC claimed that Intel, which produced eighty percent of the market for microprocessors, had terminated or threatened to terminate its arrangement of providing pre-release technical information to hardware and software vendors, in a selective, targeted fashion to retaliate against firms that sought to protect or assert patent rights in rival microprocessor technologies, such as graphics, or that refused to licence such rights to Intel.[247]

A temporary injunction was obtained against Intel for antitrust injury, which was overturned by the Federal Circuit in *Intergraph Corp. v. Intel Corp.*[248] The court determined that monopolisation and the essential facility doctrine did not apply to unilateral conduct where the parties did not compete in either the upstream or downstream market.[249] There was

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244. *See In re* IBM Peripheral EDP Devices Antitrust Litig. (Transamerica), 481 F. Supp. 965, 1003 (N.D. Cal. 1979).

245. *Berkey Photo*, 603 F.2d at 281.

246. 3 F. Supp. 2d 1255 (N.D. Ala. 1998), *vacated*, 195 F.3d 1346 (Fed. Cir. 1999).

247. *Id.* One customer, Intergraph, produced a graphics processor with patented technology called Clipper technology. Intel sought to obtain a royalty-free licence to the Clipper technology as a condition for Intergraph obtaining the pre-release product information. Intergraph refused the licence and Intel withdrew the information. This withdrawal of information caused Intergraph delays in its ability to produce and market its products. *Id.*

248. 195 F.3d 1346 (Fed. Cir. 1999). On the eve of trial in March 1999, the parties agreed to a settlement, the terms of which included that Intel could not withhold access to information for reasons related to an intellectual property dispute with that customer and that disclosure had to occur no less than six months before the official release date. The FTC suit ended with a consent decree in which Intel agreed not to stop dealing with companies merely because they were seeking to enforce intellectual property rights. *In re* Intel Corp., Agreement Containing Consent Order II.A-B, FTC Dkt. No. 9288 (Mar. 1999).

249. Intel and Intergraph did not compete in the microprocessors market.

no evidence that Intel wanted to gain a competitive advantage in a downstream market in graphics workstations. The court cited *Aspen*:

> A non-competitor's asserted need for a manufacturer's business information does not convert the withholding of that information into an antitrust violation.
>
> . . . .
>
> . . . The notion that withholding of technical information and samples of pre-release chips violates the Sherman Act, based on essential facility jurisprudence, is an unwarranted extension of precedent . . . .[250]

These differences in approach to the "special duties" of monopolists in EC and U.S. law could explain why Microsoft's refusal to supply interoperability information was not a major element of the U.S. litigation, although it did form part of the consent order. The outcome in the *Intergraph* case turned more on the fact that Intel did not have an incentive to monopolise the downstream market and the refusal to supply was an attempt to prevent others from asserting their intellectual property rights.[251]

In *Trinko*, the absence of liability may have had less to do with the absence of a "special duty" than, as we have seen, the absence of a previous course of dealing and the presence of a highly regulated federal and state statutory access regime for telecommunications, which was thought to "significantly diminish the likelihood of major antitrust harm"[252] and make it unnecessary to impose a judicial doctrine of forced access under section 2 of the Sherman Act.[253]

But does this mean that we should not impose liability on dominant firms for the refusal to supply interoperability information? The facts in these cases are arguably closer to the Supreme Court case of *Aspen* where "some cooperation" was "indispensable" to competition. As Judge Posner noted in *Olympia Equipment*: "If [*Aspen*] stands for any principle that goes beyond its unusual facts, it is that a monopolist may be guilty of monopolization if it refuses to cooperate with a competitor in circumstances where some cooperation is indispensable to effective competition."[254]

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250. *Intergraph*, 195 F.3d at 1357-58; *cf.* Aldridge v. Microsoft Corp., 995 F. Supp. 728 (S.D. Tex. 1998).

251. It may be argued that Intergraph's intellectual property rights were in the same technology market as Intel's business microprocessors. *See* Hovenkamp, Janis & Lemley, *supra* note 22, at 13 n.53.

252. Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 412 (2004).

253. *Id.* at 411.

254. Olympia Equip. Leasing Co. v. W. Union Tel. Co., 797 F.2d 370, 379 (7th Cir. 1986).

If "some cooperation" is indispensable to competition in interoperability cases, surely a duty to deal will be imposed regardless of a finding with respect to "special duties," simply as part of basic application of antitrust law principles.

The court of appeals in the U.S. *Microsoft* decision was willing to scrutinise monopoly behaviour where corporations cannot be allowed "free reign to squash nascent, albeit unproven, competitors at will."[255] Is this equivalent to requiring "special restraint?"

At the very least, this comparison of the U.S. and EC approach to "special responsibility" demonstrates that the concept itself is largely without content and in its present form, at least, is not a useful standard for distinguishing competitive from abusive conduct. The decisions can largely be explained on other grounds, invoking competition law principles.

VIII. CONCLUSION

An examination of the EC treatment of the refusal to supply interoperability information under article 82 leads to the conclusion that the approach is too focused on the regulation of market structure to the detriment of an examination of the anticompetitive effect on the market and the impact on consumer welfare. While this European "structuralist" approach is more consistent with "ordoliberal" concerns about the exercise of private economic power by dominant firms, it is not consistent with the reform of article 82, which has called for a "more economic" and "effects based" approach. Where the object of article 82 is stated as "the protection of competition on the market as a means of enhancing consumer welfare and of ensuring an efficient allocation of resources,"[256] the structural orientation of these decisions contradicts this aim. The EC emphasis is not assisted by arguments based on so-called "special responsibilities" attached to dominant and "superdominant" undertakings. This analysis contributes little to the provision of justiciable standards for distinguishing exclusionary from competitive conduct, and is particularly unhelpful in high technology markets that are characterised by network effects and significant market power. Similarly, terms such as "indispensable" are too broadly defined in these markets and are interpreted as something similar to "relative dominance," thereby exaggerating the possible abusive consequences of any refusal to supply. The "new product" and "innovation balancing" requirement for a refusal

255. United States v. Microsoft Corp., 253 F.3d 34, 64 (D.C. Cir. 2001).
256. Discussion Paper, *supra* note 12, paras. 4, 54.

to supply intellectual property rights is also not appropriately characterised within the broader question of whether the conduct goes beyond the grant of the statutory right and violates competition law principles.

But as we have seen, ambiguities are also apparent in the Discussion Paper itself, where the assessment of the refusal to supply still largely centres around the "special responsibilities" of dominant firms, formalistic categories of conduct and presumptions of foreclosure, rather than on an economic assessment of anticompetitive outcomes.

This is not to say that abusive and exclusionary conduct does not occur in high technology markets, particularly when the presence of network effects and barriers to entry make market "self-correction" difficult. As in the U.S. *Microsoft* proceedings, the abusive conduct at issue would be detrimental to competition in any market. But abuse in high technology markets must be assessed by the detriment it imposes on new market entrants who may replace the incumbent monopolist, such as the threat of "middleware." Such threats were examined by the Commission in its *Microsoft* decision, but the threats were insufficiently theorised and too speculative to be recognised as imminent. The evidence used to support the finding on the examination of the "risk of elimination of competition" was too focused on the position and market share of competitors rather than the threat of new entrants "for the market" and on evidence such as "subjective intent," which lacks probative value for distinguishing exclusionary from competitive conduct.

This examination is not advanced or clarified by the "no duty to assist" approach in the United States, which is not only largely unspecified but also has little impact on how "monopolisation" is actually identified. Other standards, such as the "profit sacrifice" and "no economic sense" tests, could be usefully employed to examine the underlying incentives of profit-maximising behaviour. In this way, conduct such as the failure to supply a previous trading partner is not considered as an abuse per se but is examined with respect to what this change in the pattern of behaviour indicates about a possible anticompetitive motivation.

The differing treatment of these issues in the EC and United States also raises harmonization issues. A decision in the EC to compel the disclosure of interoperability information potentially undermines, in a global market, the substantially different resolution to these issues in the United States consent decree.

Given the ambiguity of the conduct in *Microsoft*, it is a pity that the case resulted in the largest fine in the EC for unilateral behaviour. This raises serious issues as to the effect the fine will have on innovation incentives in the market. Dynamic markets also pose real problems for the specification and monitoring of remedies.

The Commission's decision may be explained by its concern with European public policy issues, including innovation incentives, "end-to-end connectivity," and the extraction of monopoly rents by the owners of standards. As essential facility cases illustrate, public policy concerns about access to infrastructure markets have resulted in the imposition of duties to deal in circumstances where little appropriate consideration is given to "objective justifications." If this was indeed the basis of the Commission's approach, these policies need to be interrogated and made more explicit. This also inevitably raises the question whether regulation through mechanisms such as the Software Directive is a better means to assess and balance the public purposes and proprietary interests at stake. It is important to recognise that the industry itself has already reacted to these requirements for connectivity, in response to the market incentives, by establishing interoperability codes, as profitability depends less on exclusionary behaviour and extraction but more on integration and connectivity. The question comes down to a debate about whether the high technology markets require extensive regulation or are better served by greater deference to market forces.