

[13-US] *United States v Microsoft Corp.*, 147 F.3d 935 (D.C. Cir. 1998)

Electronic annex to L. Rubini (ed.) *Microsoft on Trial: Legal and Economic Analysis of a Transatlantic Antitrust Case* (Edward Elgar: 2010)

UNITED STATES of America, Appellee,
v.
MICROSOFT CORPORATION, Appellant.

Nos. 97-5343 and 98-5012.

United States Court of Appeals,
District of Columbia Circuit.

Argued April 21, 1998.
Decided June 23, 1998.

[331 U.S.App.D.C. 124] Appeals from the United States District Court for the District of Columbia (No. 94cv01564).

Richard J. Urowsky, argued the cause, for appellant. With him on the brief were John L. Warden, Steven L. Holley, Richard C. Pepperman, II, Andrew C. Hruska, James R. Weiss, William H. Neukom and David A. Heiner, Jr.

A. Douglas Melamed, Deputy Assistant Attorney General, U.S. Department of Justice, argued the cause, for appellee. With him on the briefs were Joel I. Klein, Assistant Attorney General, Catherine G. O'Sullivan and Mark S. Popofsky, Attorneys.

Daniel E. Lungren, Attorney General of California, James E. Ryan, Attorney General of Illinois, Carla J. Stovall, Attorney General of Kansas, J. Joseph Curran, Jr., Attorney General of Maryland, Scott Harshbarger, Attorney General, for the Commonwealth of Massachusetts, Jeremiah W. (Jay) Nixon, Attorney General of Missouri, Joseph P. Mazurek, Attorney General of Montana, Frankie Sue Del Papa, Attorney General of Nevada, Tom Udall, Attorney General of New Mexico, and W.A. Drew Edmondson, Attorney General of Oklahoma, members of the Bar of this Court, were on the brief of certain States as amici curiae, with whom appeared the various other Attorneys General of the participating States.

Before: WALD, WILLIAMS and RANDOLPH, Circuit Judges.

Opinion for the Court filed by Circuit Judge WILLIAMS.

Opinion concurring in part and dissenting in part filed by Circuit Judge WALD.

STEPHEN F. WILLIAMS, Circuit Judge:

The district court entered a preliminary injunction prohibiting Microsoft Corporation from requiring computer manufacturers who license its operating system software to license its internet browser as well. In granting the preliminary injunction the court also referred the government's motion for a permanent injunction to a special master. Microsoft appeals the preliminary injunction and applies for a writ of mandamus revoking the reference to a master. We find that the district court erred procedurally in entering a preliminary injunction without notice to Microsoft and substantively in its implicit construction of the consent decree on which the preliminary injunction rested. We also grant the petition for mandamus and direct the district court to revoke or revise its reference.

I.

This case arises from Microsoft's practices in marketing its Windows 95 operating system. An operating system is, so to speak, the central nervous system of the computer, controlling the computer's interaction with peripherals such as keyboards and printers. Windows 95 is an operating system that integrates a DOS shell with a graphical user interface,

i.e., a technology by which the operator performs functions not by typing at the keyboard but by clicks of his mouse. Operating systems also serve as "platforms" for application software such as word processors. As the word "platform" suggests, the operating system provides a basic support structure for an application via "application programming interfaces" ("APIs"), [331 U.S.App.D.C. 125] which provide general functions on which applications can rely. Each operating system's APIs are unique; hence applications tend to be written for particular operating systems. The primary market for operating systems consists of original equipment manufacturers ("OEMs"), which make computers, install operating systems and other software that they have licensed from vendors such as Microsoft, and sell the package to end users. These may be either individual consumers or businesses.

In an earlier opinion, also arising from litigation generated by the Justice Department's 1994 antitrust suit against Microsoft, we briefly described Microsoft's role in the software industry and some of the industry's economics. *United States v. Microsoft Corp.*, 56 F.3d 1448, 1451-52 (D.C.Cir.1995). Because IBM chose to install Microsoft's operating system on its personal computers, Microsoft acquired an "installed base" on millions of IBM and IBM-compatible PCs. That base constituted an exceptional advantage, and created exceptional risks of monopoly, because of two characteristics of the software industry--increasing returns to scale and network externalities. First, because most of the costs of software lie in the design, marginal production costs are negligible. Production of additional units appears likely to lower average costs indefinitely. (I.e., the average cost curve never turns upward.) Second, an increase in the number of users of a particular item of software increases the number of other people with whom any user can share work. As a result, Microsoft's large installed base increases the incentive for independent software vendors to write compatible applications and thereby increases the value of its operating system to consumers.

The Department's 1994 complaint alleged a variety of anticompetitive practices, chiefly in Microsoft's licensing agreements with OEMs. Along with it, the Department filed a proposed consent decree limiting Microsoft's behavior, the product of negotiations between Microsoft, the Department and European competition authorities. Most relevant here is § IV(E) of the decree:

Microsoft shall not enter into any License Agreement in which the terms of that agreement are expressly or impliedly conditioned upon:

(i) the licensing of any other Covered Product, Operating System Software product or other product (provided, however, that this provision in and of itself shall not be construed to prohibit Microsoft from developing integrated products); or

(ii) the OEM not licensing, purchasing, using or distributing any non-Microsoft product.

The Department sees a violation of § IV(E)(i) in Microsoft's marketing of Windows 95 and its web browser, Internet Explorer ("IE").

The Internet is a global network that links smaller networks of computers. The World Wide Web ("the Web") is the fastest-growing part of the Internet, composed of multimedia "pages" written in Hypertext Markup Language ("HTML") and connected to other pages by hypertext links. Browsers enable users to navigate the Web and to access information.

Most browsers are designed according to a "multi-platform" approach, with different versions for each of a variety of different operating systems. Joint Appendix ("J.A.") 81. Browsers also have the potential to serve as user interfaces and as platforms for applications (which could then be written for the APIs of a particular browser rather than of a particular operating system¹), providing some of the traditional functions of an operating system. Widespread use of multi-platform browsers as user interfaces has some potential to reduce any monopoly-increasing effects of network externalities in the operating system market. Browsers can enable the user to access applications stored on the [331 U.S.App.D.C. 126] Internet or local networks, or to operate applications that are independent of the operating system. J.A. 103-05.

Microsoft has developed successive versions of IE, the first of which was initially released with Windows 95 in July 1995. Microsoft's Windows 95 license agreements have required OEMs to accept and install the software package as sent to them by Microsoft, including IE, and have prohibited OEMs from removing any features or functionality, i.e., capacity to perform functions such as browsing. J.A. 86-89.

The first three versions of IE were actually included on the Windows 95 "master" disk supplied to OEMs. Department Br. at 4; J.A. 1277-78. IE 4.0, by contrast, was initially distributed on a separate CD-ROM and OEMs were not required

to install it. Microsoft intended to start requiring OEMs to preinstall IE 4.0 as part of Windows 95 in February 1998. On learning of Microsoft's plans, the Department became concerned that this practice violated § IV(E)(i) by effectively conditioning the license for Windows 95 on the license for IE 4.0, creating (in its view) what antitrust law terms a "tie-in" between the operating system and the browser.² (It is not clear why extension of Microsoft's established IE policy to IE 4.0 aroused the Department's concern.) It filed a petition seeking to hold Microsoft in civil contempt for its practices with respect to IE 3.0, and requesting "further" that the court explicitly order Microsoft not to employ similar agreements with respect to any version of IE.

A party seeking to hold another in contempt faces a heavy burden, needing to show by "clear and convincing evidence" that the alleged contemnor has violated a "clear and unambiguous" provision of the consent decree. *Armstrong v. Executive Office of the President*, 1 F.3d 1274, 1289 (D.C.Cir.1993). Finding § IV(E)(i) ambiguous, the district court denied the Department's contempt petition. But that left open the possibility that Microsoft's practices might in fact violate the consent decree (though not so clearly as to justify contempt), and the district court continued the proceedings in order to answer that question, appointing a special master not only to oversee discovery but also to propose findings of fact and conclusions of law. For the meantime, the court entered a preliminary injunction forbidding Microsoft from the practice of licensing the use of any Microsoft personal computer operating system software (including Windows 95 or any successor version thereof) on the condition, express or implied, that the licensee also license and preinstall any Microsoft Internet browser software (including Internet Explorer 3.0, 4.0, or any successor versions thereof).

J.A. 1300.

A detour is necessary to explore what this injunction meant. In some of its papers before the court the Department had argued for an order barring Microsoft from "forcing OEMs to accept and preinstall the software code" that it separately distributes at retail as IE 3.0. J.A. 996. Microsoft had responded that a Windows 95 operating system without IE software code simply would not function. The government characterized that assertion as "greatly overblown." J.A. 1237. The district court, in its justifying memorandum, referred to the injunction as barring Microsoft from "forcing OEMs to accept and preinstall the software code" separately distributed as IE 3.0, J.A. 1296-97; i.e., it employed the Department's exact words on the subject. After the injunction was issued, Microsoft and the Department had further consultations, at the end of which they entered a stipulation that Microsoft would be in compliance with the injunction if it extended to OEMs the options of (1) running the Add/Remove Programs utility with respect to IE 3.x and (2) removing the IE icon from the desktop and from the [331 U.S.App.D.C. 127] Programs list in the Start menu and marking the file IEXPLORE.EXE "hidden." J.A. 1780-81. It appears not to be disputed that these alternate modes of compliance do not remove the IE software code, which indeed continues to play a role in providing non-browser functionality for Windows. In fact, browser functionality itself persists, and can be summoned up either by entering four lines of code or by running any application (such as Quicken) that contains the code necessary to invoke the functionality. J.A. 1649-55. The agreed-upon means of compliance simply enable the OEMs to make user access to IE more difficult.³

Microsoft appealed, as authorized by 28 U.S.C. § 1292(a)(1), and also sought mandamus directing the district court to revoke the reference to the special master.

II.

Microsoft claims at the outset that the district court, after finding no contempt, should simply have dismissed the Department's petition. But although the petition was styled simply as one for an order to show cause "Why Respondent Microsoft Corporation Should Not Be Held in Civil Contempt," its prayer for relief sought not only pure contempt remedies (such as the attention-grabbing request for \$1,000,000 a day in damages), but also an order directing Microsoft to cease and desist from requiring "OEMs to license any version of Internet Explorer as an express or implied condition of licensing Windows 95." J.A. 41. This was plainly a request for clarification of the consent decree, pinning down its application to the browser issue. Such a clarification may properly take the form of an injunction. See *Brewster v. Dukakis*, 675 F.2d 1, 3-4 (1st Cir.1982). Indeed, as a consent decree contains an injunction already, a clarification naturally acquires the same character. (Of course, if the supplementary language goes beyond the consent decree, it is a modification rather than a clarification, and is governed by different standards. See, e.g., *United States v. Western Elec. Co.*, 894 F.2d 430, 435 (D.C.Cir.1990) ("Manufacturing Appeal").) Although the framing of this request as part of a remedy for contempt may have been odd, Microsoft does not contest that the proceeding put in controversy the meaning of § IV(E)(i) as applied to its browser technology.

This government request for clarification appeared in its petition shortly after its primary request--that the court adjudge Microsoft to be in contempt--and the word "further." Following "further" are a raft of requests for orders, this being just

one. Microsoft says this clearly shows that the request was contingent on a finding of contempt. It further (here, in the sense of "additionally") presses on us some lines from a colloquy between the district court and a Department lawyer during the final hearing (December 5, 1997) before the court made its decision to issue a preliminary injunction:

THE COURT: All right. Let me go to the relief that you have requested here. Your petition is in terms phrased only as a petition for a finding of contempt.

MR. MALONE: That's correct, Your Honor.

THE COURT: We've have [sic] gone beyond the show cause [stage]. They have shown cause, and we're now at the contempt stage.

Is that the only relief that you're looking for, or am I to read the petition as what I am inclined to read it as, and that is a petition for specific enforcement?

MR. MALONE: I think that is exactly how the Court should read it, Your Honor. I think we have said, very clearly, in arguing since the beginning that we want the Court--we believe the Court can find Microsoft in contempt and can impose this specific relief to remedy the contempt, and should quickly.

Microsoft has opposed that on merits grounds, but I don't think Microsoft has come along and said, "You can't do that. This is just an order to show cause or something else." [331 U.S.App.D.C. 128] The merits are very much before the Court, and what we're asking is for the specific relief that we requested in the petition.

That really boils down to, Your Honor, simply an order telling Microsoft, "You may no longer force OEMs to take Internet Explorer as a condition of getting you[r] Windows 95 license."

J.A. 1235-36.

In fact we think this dialogue suggests either that the Department's request was always in the alternative or that it modified the request to make it such. "I think that is exactly how the Court should read it" comes in response to a suggestion that the petition be read as a request for specific enforcement, and the interest in clarification is presented as the Department's central concern. J.A. 1295. Given the district court's participation in the colloquy, we might be inclined, if necessary, to defer to its understanding of the Department's prayer for relief.

Even if we found that the Department's request was in fact contingent on a finding of contempt, however, we do not think the district court would have erred in clarifying the decree sua sponte as an incident to its denial of the contempt petition. Contempt motions are often accompanied by requests for clarification in the alternative. But they also often elicit declaratory clarifications, and sometimes even amendments, as accompaniments to denials even without (so far as appears) explicit alternative requests for clarification. See, e.g., *Wilder v. Bernstein*, 49 F.3d 69, 71-72 (2d Cir.1995); *Thermice Corp. v. Vistron Corp.*, 832 F.2d 248, 250-51 (3d Cir.1987); *Gov't of the Virgin Islands v. Sun Island Car Rentals, Inc.*, 819 F.2d 430, 431 (3d Cir.1987); *Movie Systems, Inc. v. MAD Minneapolis Audio Distributors, Inc.*, 717 F.2d 427, 429-30 (8th Cir.1983); *Vertex Distributing, Inc. v. Falcon Foam Plastics, Inc.*, 689 F.2d 885, 888 n. 2, 892 (9th Cir.1982); *Stolberg v. Board of Trustees for State Colleges*, 541 F.2d 890, 892 (2d Cir.1976); *Red Ball Int. Demolition Corp. v. Palmadessa*, 947 F.Supp. 116, 121 (S.D.N.Y.1996); *Johnson v. Heckler*, 604 F.Supp. 1070, 1075-76 (N.D.Ill.1985).

We are aware of no case raising doubts about the propriety of clarification incident to the denial of a contempt petition. Indeed, at oral argument Microsoft conceded "in principle" the court's authority to continue the proceeding in order to clarify the decree. Transcript at 11.⁴ Of course, the above cases characteristically did not explicitly affirm the district court's authority, although one did just that. See *Vertex*, 689 F.2d at 892 ("[T]he district court could properly clarify that ambiguous language, and this it did, requiring defendants to change their future advertising to comply with the consent judgment, as clarified.").

Microsoft points out that the question of district court authority is jurisdictional, so that mere practice may not be enough. But much repeated practice illumines the generally understood meaning of petitions for contempt citations. A court granting a clarification that the parties have not explicitly requested has at most construed the petition to contain an implicit request for declaratory relief. This construction seems altogether reasonable where, as here, the petition clearly puts the meaning of the consent decree in issue and the petition makes the standard request (in the rather typical words of this petition) for "such further orders as the nature of the case may require and as the Court may deem just and

proper to compel obedience to and compliance with the orders and decrees of this Court." J.A. 43. Cf. Johnson, 604 F.Supp. at 1075-76 (denying contempt petition but clarifying decree in response to request for further relief under 28 U.S.C. § 2202).

Because it was not error for the court to address the issue of clarification, we must decide whether the preliminary injunction was correctly granted.[331 U.S.App.D.C. 129] III.

Microsoft argues that the district court failed to comply with Federal Rule of Civil Procedure 65(a)(1)'s command, "No preliminary injunction shall be issued without notice to the adverse party." We agree. Obviously the Department's request for a contempt citation provided no such notice, for the governing criteria are completely different. To defeat the contempt petition, all Microsoft had to do was to show that the Department failed to meet its burden of showing that the consent decree unambiguously barred its conduct. For a preliminary injunction, by contrast, traditional equitable standards would require the government to show substantial likelihood of success on the merits (here, that the decree, properly construed, barred the conduct), plus risk of irreparable injury, lack of substantial injury to the opposing party, and consistency with the public interest. See *CityFed Financial Corp. v. Office of Thrift Supervision*, 58 F.3d 738, 746 (D.C.Cir.1995). The contempt petition did not alert Microsoft to contest these factors.

Nor could the Department's request for a permanent injunction serve as notice--even putting aside Microsoft's argument that the request was contingent on a situation that never arose (see section II). The request for a permanent injunction amounted to no more than a request for a clarification, and thus would require only a showing that the Department's reading of the consent decree was correct. It did not put into play the equitable factors of interim irreparable injury to the requester, harm to the party to be enjoined, and effects on the public interest. But resolution of these is essential in granting a preliminary injunction; the proponent must make a showing about the interim risks precisely in order to counterbalance the lack of any final ruling in its favor on the merits.

At oral argument the Department claimed that when the government seeks a preliminary injunction under a statute, its showing of a likelihood of success on the merits supplants the normal need for assessment of the interim risks. This is true under some circumstances. First, it is clear that if a statute confers a right to an injunction once a certain showing is made, no plaintiff--neither governmental agencies nor private parties--need show more than the statute specifies. See, e.g., *Illinois Bell Telephone Co. v. Illinois Commerce Comm'n*, 740 F.2d 566, 571 (7th Cir.1984) (irreparable injury not required for preliminary injunction under 47 U.S.C. § 401(b), which provides that court "shall enforce" FCC order upon showing of disobedience). The statutory specification displaces the traditional equitable standards, but this displacement is "not lightly assume[d]." *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312, 102 S.Ct. 1798, 72 L.Ed.2d 91 (1982). Plaintiffs must show that Congress intended to "intervene and guide or control the exercise of the courts' discretion." *Id.* at 313, 102 S.Ct. 1798. See also *Amoco Production Co. v. Village of Gambell*, 480 U.S. 531, 541-45, 107 S.Ct. 1396, 94 L.Ed.2d 542 (1987).

Second, and not entirely distinct in the cases, lurks the proposition that when a governmental entity sues to enforce a statute, irreparable injury is presumed to flow from the violation itself. See, e.g., *United States v. Diapulse*, 457 F.2d 25, 27-28 (2d Cir.1972) ("The passage of the statute is, in a sense, an implied finding that violations will harm the public and ought, if necessary, [to] be restrained."). It is unclear, however, whether such decisions actually turn on the identity of the plaintiff, or whether they are simply instances where the court read the statute as providing for injunction on a reduced showing and mentioned the enforcing agency because it happened to be the plaintiff before the court. As the cases did not purport to apply the doctrine to all statutes under which a government agency might seek relief, but limited it, for example, to "remedial" ones,⁵ [331 U.S.App.D.C. 130] see, e.g., *Commodity Futures Trading Comm'n v. Muller*, 570 F.2d 1296, 1300 (5th Cir.1978), the latter seems more probable.

Some cases antedating *Romero-Barcelo* took the view that mere statutory authorization of injunctive relief displaced equitable standards, see, e.g., *Atchison, Topeka & Santa Fe Railway Co. v. Lennen*, 640 F.2d 255, 259 (10th Cir.1981) (citing cases). Under this view § 4 of the Sherman Act, 15 U.S.C. § 4, authorizing such temporary injunctive relief "as shall be deemed just," but setting no standards for its award, would evidently be enough. But such cases seem outmoded by *Romero-Barcelo*'s view that displacement of the usual equitable standards requires a "clear and valid legislative command." 456 U.S. at 313, 102 S.Ct. 1798, quoting *Porter v. Warner Holding Co.*, 328 U.S. 395, 398, 66 S.Ct. 1086, 90 L.Ed. 1332 (1946). In fact, even before *Romero-Barcelo* the Court construed § 4's grant as controlled by the ordinary principles of equity courts. *De Beers Consol. Mines v. United States*, 325 U.S. 212, 218-19, 65 S.Ct. 1130, 89 L.Ed. 1566 (1945).

In any event, the Department's suggestion is irrelevant. The preliminary injunction was entered in a suit to enforce a consent decree, not a statute. As the settlement of a litigation, the decree may require less than the statute under which the suit was brought, or more, *United States v. Armour & Co.*, 402 U.S. 673, 681-82, 91 S.Ct. 1752, 29 L.Ed.2d 256

(1971); *Ass'n for Retarded Citizens v. Thorne*, 30 F.3d 367, 369 (2d Cir.1994), so the violation of one is not necessarily a violation of the other. Thus a finding of probable violation of the consent decree could not support a presumption of irreparable harm even under the most extravagant version of the doctrine the government invokes.

So the district court did need to find irreparable injury before granting the preliminary injunction. The absence of notice had the effect of precluding the introduction of evidence and argument on this requirement, and the omission was far from trivial. At oral argument the Department conceded that it had offered no evidence on the subject, and Microsoft suggested that it could have forcefully contested anything the Department might have offered, alluding to information--obviously not in the record--that no OEM had, since entry of the preliminary injunction, sought to take advantage of its terms. Transcript at 10, 61.⁶

The purpose of Rule 65(a)(1)'s notice requirement is to allow the opposing party a fair opportunity to oppose the preliminary injunction, see *Weitzman v. Stein*, 897 F.2d 653, 657 (2d Cir.1990), and compliance is mandatory, *Parker v. Ryan*, 960 F.2d 543, 544 (5th Cir.1992). Preliminary injunctions entered without notice to the opposing party are generally dissolved. See, e.g., *Williams v. McKeithen*, 939 F.2d 1100, 1105-06 (5th Cir.1991); *Weitzman*, 897 F.2d at 657-58; *Phillips v. Chas. Schreiner Bank*, 894 F.2d 127, 130-31 (5th Cir.1990). Appellate courts have, however, on occasion allowed a procedurally flawed injunction to remain in place pending a proper hearing on remand if the equities support such a disposition. See, e.g., *Rosen v. Siegel*, 106 F.3d 28, 33 (2d Cir.1997).

The Department urges us to do so here. Evaluating such a request requires the court to consider the traditional equitable factors as apparent on the existing record. See, e.g., *Inverness Corp. v. Whitehall Laboratories*, 819 F.2d 48, 51 (2d Cir.1987). We do not believe that a reviewing court must entertain such a request; if the record were so deficient as to make effective evaluation of the equities impossible, a court might do better simply to vacate the injunction as a matter of course--especially where, as here, the injunction was sought only rather obliquely. As later sections will show, however, the record here is enough for us at least to make a reasonable appraisal of the Department's eventual likelihood of success on the merits, and this factor proves dispositive. Silence at this stage would risk considerable [331 U.S.App.D.C. 131] waste of litigative resources. "When the district court's estimate of the probability of success depends on an incorrect or mistakenly applied legal premise, 'the appellate court furthers the interest of justice by providing a ruling on the merits to the extent that the matter is ripe, though technically the case is only at the stage of application for preliminary injunction.' " *Air Line Pilots Ass'n Int'l v. Eastern Air Lines, Inc.*, 863 F.2d 891, 895 (D.C.Cir.1988) (quoting *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 832 (D.C.Cir.1972)). When reviewing preliminary injunctions we have generally not been hesitant to offer interpretation and guidance on the substantive legal issues. See, e.g., *Defenders of Wildlife v. Andrus*, 627 F.2d 1238, 1243 (D.C.Cir.1980); *Energy Action Educational Found'n v. Andrus*, 631 F.2d 751, 761 (D.C.Cir.1979); *Maryland-National Capital Park & Planning Comm'n v. U.S. Postal Service*, 487 F.2d 1029, 1041 (D.C.Cir.1973). We thus turn to the interpretation of § IV(E)(i), on which the merits of the Department's case depend. Our review of a district court's interpretation of a consent decree is de novo.⁷ See, e.g., *Richardson v. Edwards*, 127 F.3d 97, 101 (D.C.Cir.1997); *United States v. Western Elec. Co.*, 12 F.3d 225, 229 (D.C.Cir.1993); *United States v. Western Elec. Co.*, 900 F.2d 283, 293 (D.C.Cir.1990) ("Triennial Review ").

IV.

Section IV(E) arose from a 1993 complaint filed with the Directorate General IV of the European Union ("DG IV") (the principal competition authority in Europe). Novell, a rival software vendor, alleged that Microsoft was tying its MS-DOS operating system to the graphical user interface provided by Windows 3.11. Before the introduction of Windows 95, which integrated the two, Microsoft marketed the DOS component and the Windows component of the operating system separately, and Windows 3.11 could be operated with other DOS products. But Novell, which marketed a competing DOS product, DR-DOS, complained that by means of specific marketing practices--particularly "per processor and per system licenses," J.A. 754--Microsoft was creating economic incentives for OEMs to preinstall MS-DOS as well as Windows 3.11, thereby using its power in the market for DOS-compatible graphical user interfaces (where it commanded a near 100% market share) to affect OEM choice in the DOS market.⁸ J.A. 839-48.

During June 1994 negotiations with the Department, Microsoft proposed the possibility of a joint settlement, and representatives [331 U.S.App.D.C. 132] of DG IV participated in meetings in Brussels and later in Washington, D.C. On July 15, 1994, the three sides reached agreement and Microsoft and the Department signed a stipulation agreeing to entry of the consent decree, including § IV(E). Both Microsoft and the Department characterize § IV(E) as an "anti-tying" provision.

Microsoft and the Department engage in a brief battle over the extent to which antitrust law may be relevant to this dispute. Without wasting time on the parties' somewhat exaggerated positions, we can simply say that Microsoft is clearly right that the decree does not embody either the entirety of the Sherman Act or even all "tying" law under the Act, and the Department is equally right to point out that the consent decree emerged from antitrust claims, unresolved though they were, so that we must keep procompetitive goals in mind in the interpretive task.

As *Armour* makes clear, however, an antitrust consent decree cannot be read as though its animating spirit were solely the antitrust laws. "[T]he decree itself cannot be said to have a purpose; rather the parties have purposes, generally opposed to each other, and the resultant decree embodies as much of those opposing purposes as the respective parties have the bargaining power and skill to achieve." 402 U.S. at 681-82, 91 S.Ct. 1752.

The court's task, then, is to discern the bargain that the parties struck; this is the sense behind the proposition that consent decrees are to be interpreted as contracts. See, e.g., *ITT Continental Baking Co.*, 420 U.S. at 236-37, 95 S.Ct. 926; *Richardson*, 127 F.3d at 101; *United States v. Western Elec. Co.*, 894 F.2d 1387, 1390 (D.C.Cir.1990). To find the meaning of an ambiguous provision we look for the intent of the parties, just as we would with a contract. See *Western Elec. Co.*, 12 F.3d at 231-32 (reading ambiguous provision of consent decree "in light of the parties' jointly intended purpose" (internal quotation omitted)); *NRM Corp. v. Hercules, Inc.*, 758 F.2d 676, 681-82 (D.C.Cir.1985) (contract interpretation). In that quest we may rely on the same aids to construction as we would when interpreting an ambiguous contract, including "the circumstances surrounding the formation of the consent order." See *ITT*, 420 U.S. at 238, 95 S.Ct. 926.

Section IV(E)(i) represented the parties' agreed "solution" to the problem posed by the Novell complaint. The practices complained of there, coupled with the decree's explicit acceptance of Windows 95, establish the competing models that guide our resolution of the present dispute. Whatever else § IV(E)(i) does, it must forbid a tie-in between Windows 3.11 and MS-DOS, and it must permit Windows 95. Thus if the relation between Windows 95 and IE is similar to the relation between Windows 3.11 and MS-DOS, the link is presumably barred by § IV(E)(i). On the other hand, a counter-analogy is Windows 95 itself, which the decree explicitly recognizes as a single "product" (it defines it as a "Covered Product," § II(1)(v)), even though, as we have said, Windows 95 combines the functionalities of a graphical interface and an operating system. If the Windows 95/IE combination is like the MS-DOS/graphical interface combination that comprises Windows 95 itself, then it must be permissible.

The parties offer us little help in picking the correct analogy. Both propose readings of § IV(E)(i) that fail to reconcile its language with the facts of the Novell complaint and the later permissible release of Windows 95. The Department claims that § IV(E)(i) prohibits Microsoft from bundling together a Covered Product and anything that "Microsoft simultaneously treats" and "antitrust law regards" as "a distinct commercial product." Department Br. at 37-38. It says that the browser-Windows pair is caught in the first filter (Microsoft's treatment of IE as a separate product) because Microsoft provides it separately to end users, sells versions of IE 4 for different operating systems, advertises IE 4, tracks its performance in a "browser market," and distributes it on a separate CD-ROM. J.A. 32-37. For antitrust criteria, the Department draws on *Jefferson Parish Hosp. District No. 2 v. Hyde*, 466 U.S. 2, 104 S.Ct. 1551, 80 L.Ed.2d 2 (1984), for the proposition that products are distinct for tying purposes if consumer demand exists for each separately. (The Department notes correctly that this does not require demand [331 U.S.App.D.C. 133] for one product without the other but simply demand for the two products from different sellers. See *id.* at 19 & n. 30, 104 S.Ct. 1551.)

We are not convinced that these indicia necessarily point to separateness, especially those that depend on Microsoft's treatment. Microsoft plausibly characterizes the IE that it provides to end users as an operating system upgrade, as does its rival Netscape, J.A. 589, and the Department offers no means of distinguishing an upgrade from a separate product. Versions developed for different operating systems may be better understood as different products altogether; hence, their relevance to separateness is obscure. Distribution of software code on a separate CD-ROM shows nothing at all about whether the code is integrated into an operating system (software for an operating system that is clearly a single product may take up many disks).

The Department's interpretation of the "integrated products" proviso does nothing to remedy its reading of the body of § IV(e)(i). On the Department's account, the proviso allows Microsoft to incorporate new features into an operating system and offer the package to OEMs--as long as it and antitrust law do not simultaneously treat those features as "a distinct commercial product." Department Br. at 37-38. But these are just the criteria deployed to argue that IE is an "other product"; if the proviso merely reiterates them (to say that what is not an "other product" is "integrated"), it does nothing. And while the Department says that the proviso would protect Microsoft from a charge that it had violated the decree by adopting a technology incompatible with other firms' products, Department Br. at 37 n.17, it is not apparent how § IV(E)(i)'s ban might prohibit such conduct nor how, if it did, the proviso on integration would help it. In short, the Department effectively reads the proviso out of § IV(e)(i).

But the most immediate problem with this reading is that it produces the wrong result on the Novell allegations. In its attempts to define the "product" IE, the Department consistently invokes the concept of "browser functionality." Department Br. at 10; Department Motion for Contempt, J.A. 1317-19; Department Reply Memorandum in Support of Motion for Contempt, J.A. 1424, 1429. But if functionality is the criterion of identity (which the Department asserts so as to claim that the "browser functionality" in Windows 95 is the same product as IE 4 for other operating systems), Windows 95 looks like a tie-in of two products (MS-DOS and Windows 3.11) that were sold separately in the market: it contains the functionalities of both. On the Department's reading, it should thus be prohibited unless Microsoft refrains from marketing MS-DOS separately. There is some suggestion that Microsoft has in fact continued to license MS-DOS separately, at least to end users. Microsoft Reply Br. at 15-16. More significantly, the consent decree does not condition its approval of Windows 95 on Microsoft's marketing behavior with respect to MS-DOS. The failure to produce the right result when applied to Windows 95, one of the situations clearly resolved by the decree, is a fatal flaw.⁹

The interpretation that Microsoft advances most strongly suffers mirror-image defects: it lacks much logical sense and it fails to fit the decree's setting, the disposition of the Novell complaint. Microsoft stresses § IV(E)(i)'s "integrated products" proviso, saying that the addition of any feature to an operating system, as by simply putting the disk containing a compatible application in the same box with the operating system disk and requiring an OEM to install both, creates an integrated product--unless Microsoft [331 U.S.App.D.C. 134] also licenses the feature on a stand-alone basis "in the OEM channel."

This interpretation neatly matches the failure of the Department's theory to account for the permissibility of Windows 95: Microsoft's reading would provide zero relief to Novell, for it would allow Microsoft to bundle MS-DOS with Windows 3.11 as long as it did not license MS-DOS separately to OEMs. In short, the Department's reading does not permit Windows 95, and Microsoft's does not prohibit a bundle of Windows 3.11 and MS-DOS. Neither can be the correct interpretation of a provision that was intended to do both.

Curiously, in both parties' readings Microsoft's behavior determines the permissibility of conditioned licensing. This would be no defect if the behavior were in some way relevant to the economic principles of tie-ins. But it is not. The Department offers no theory as to how a seller's abstaining from separate marketing of the tied good might blunt the possible anticompetitive effects of bundling.¹⁰ It seems especially beside the point where the goods are complements used in fixed proportions. A monopolist who ties two such goods has no obvious reason to market the tied good separately: since all buyers of the tying good will also take the tied good, the residual market for the tied good will be minimal. If the concern is that the tie-in makes it more difficult for competitors to enter the market for the tying good (because they must also offer the tied good), see *Grappone, Inc. v. Subaru of New England*, 858 F.2d 792, 795-96 (1st Cir.1988) (Breyer, J.), separate marketing of the tied good actually mitigates the posited harm by facilitating new entry into the market for the tying good. Thus both readings allow legitimization by behavior that is either irrelevant or actively harmful.

We think it quite possible, however, to find a construction of § IV(E)(i) that is consistent with the antitrust laws and accomplishes the parties' evident desires on entering the decree. The Department and DG IV were concerned with the alleged anticompetitive effects of tie-ins. Microsoft's goal was to preserve its freedom to design products that consumers would like. Antitrust scholars have long recognized the undesirability of having courts oversee product design, and any dampening of technological innovation would be at cross-purposes with antitrust law. Thus, a simple way to harmonize the parties' desires is to read the integration proviso of § IV(E)(i) as permitting any genuine technological integration, regardless of whether elements of the integrated package are marketed separately.

This reading requires us, of course, to give substantive content to the concept of integration. We think that an "integrated product" is most reasonably understood as a product that combines functionalities (which may also be marketed separately and operated together) in a way that offers advantages unavailable if the functionalities are bought separately and combined by the purchaser.

The point of the test is twofold and may be illustrated by its application to the paradigm case of the Novell complaint and the subsequent release of Windows 95. First, "integration" suggests a degree of unity, something beyond merely placing disks in the same box. If an OEM or end user (referred to generally as "the purchaser") could buy separate products and combine them himself to produce the "integrated product," then the integration looks like a sham. If Microsoft had simply placed the disks for Windows 3.11 and MS-DOS in one package and covered it with a single license agreement, it would have offered purchasers nothing they could not get by buying the separate products and combining them on their own.¹¹

[331 U.S.App.D.C. 135] Windows 95, by contrast, unites the two functionalities in a way that purchasers could not; it is not simply a graphical user interface running on top of MS-DOS. Windows 95 is integrated in the sense that the two functionalities--DOS and graphical interface--do not exist separately: the code that is required to produce one also produces the other. Of course one can imagine that code being sold on two different disks, one containing all the code necessary for an operating system, the other with all the code necessary for a graphical interface. But as the code in the two would largely overlap, it would be odd to speak of either containing a discrete functionality. Rather, each would represent a disabled version of Windows 95. The customer could then "repair" each by installing them both on a single computer, but in such a case it would not be meaningful to speak of the customer "combining" two products. Windows 95 is an example of what Professor Areeda calls "physical or technological interlinkage that the customer cannot perform." X Areeda, Elhauge & Hovenkamp, *Antitrust Law* § 1746b at 227, 228 (1996).

So the combination offered by the manufacturer must be different from what the purchaser could create from the separate products on his own. The second point is that it must also be better in some respect; there should be some technological value to integration. Manufacturers can stick products together in ways that purchasers cannot without the link serving any purpose but an anticompetitive one. The concept of integration should exclude a case where the manufacturer has done nothing more than to metaphorically "bolt" two products together, as would be true if Windows 95 were artificially rigged to crash if IEXPLORE.EXE were deleted. Cf. *ILC Peripherals Leasing Corp. v. International Business Machines Corp.*, 448 F.Supp. 228, 233 (N.D.Cal.1978) ("If IBM had simply bolted a disk pack or data module into a drive and sold the two items as a unit for a single price, the 'aggregation' would clearly have been an illegal tying arrangement.") *aff'd per curiam sub nom. Memorex Corp. v. International Business Machines Corp.*, 636 F.2d 1188 (9th Cir.1980); X Areeda, Elhauge & Hovenkamp, *Antitrust Law* p 1746 at 227 (discussing literal bolting). Thus if there is no suggestion that the product is superior to the purchaser's combination in some respect, it cannot be deemed integrated.¹²

It might seem difficult to put the two elements discussed above together. If purchasers cannot combine the two functionalities to make Windows 95, it might seem that there is nothing to test Windows 95 against in search of the required superiority. But purchasers can combine the functionalities in their stand-alone incarnations. They can install MS-DOS and Windows 3.11. The test for the integration of Windows 95 then comes down to the question of whether its integrated design offers benefits when compared to a purchaser's combination of corresponding stand-alone functionalities. The decree's evident embrace of Windows 95 as a permissible single product can be taken as manifesting the parties' agreement that it met this test.

The short answer is thus that integration may be considered genuine if it is beneficial when compared to a purchaser combination. But we do not propose that in making this inquiry the court should embark on product design assessment. In antitrust law, from which this whole proceeding springs, the courts have recognized the limits of their institutional competence and have on that ground rejected theories of "technological tying." A court's evaluation of a claim of integration [331 U.S.App.D.C. 136] must be narrow and deferential.¹³ As the Fifth Circuit put it, "[S]uch a violation must be limited to those instances where the technological factor tying the hardware to the software has been designed for the purpose of tying the products, rather than to achieve some technologically beneficial result. Any other conclusion would enmesh the courts in a technical inquiry into the justifiability of product innovations." *Response of Carolina, Inc. v. Leasco Response, Inc.*, 537 F.2d 1307, 1330 (5th Cir.1976).

In fact, Microsoft did, in negotiations, suggest such an understanding of "integrated." In response to the Department and DG IV's statement of concern about tying, it asserted its right to "continue to develop integrated products like [Windows 95] that provide technological benefits to end users." J.A. 756 (emphasis added). Microsoft later withdrew this qualifying phrase, J.A. 760, in order, it claims, to avoid the application of "vague or subjective criteria"--though why the absence of criteria should cure a vagueness problem is unclear. But we do not think that removing the phrase can drain the word "integrated" of all meaning, and we do not accept the suggestion that the Department and DG IV bargained for an "integrated products" proviso so boundless as to swallow § IV(E)(i). Significantly, Microsoft assured the Department and DG IV that the elimination of the qualifying phrase "did not represent a substantive change." J.A. 761.

We believe this understanding is consistent with tying law. The Court in *Eastman Kodak Co. v. Image Tech. Servs.*, 504 U.S. 451, 112 S.Ct. 2072, 119 L.Ed.2d 265 (1992), for example, found parts and service separate products because sufficient consumer demand existed to make separate provision efficient. See *id.* at 462, 112 S.Ct. 2072. But we doubt that it would have subjected a self-repairing copier to the same analysis; i.e., the separate markets for parts and service would not suggest that such an innovation was really a tie-in. (The separate opinion, we take it, makes roughly the same point by its observation about digital cameras. See *Sep. Op.* at 958.) Similarly, Professor Areeda argues that new products integrating functionalities in a useful way should be considered single products regardless of market structure. See X Areeda, Elhauge & Hovenkamp, *Antitrust Law* p 1746b.¹⁴

We emphasize that this analysis does not require a court to find that an integrated product is superior to its stand-alone rivals. See *ILC Peripherals Leasing Corp. v. International Business Machines Corp.*, 458 F.Supp. 423, 439 (N.D.Cal.1978) ("Where there is a difference of opinion as to the advantages of two alternatives which can both be defended from an engineering standpoint, the court will not allow itself to be enmeshed 'in a technical inquiry into the justifiability of product innovations.'") (quoting *Leasco*, 537 F.2d at 1330), *aff'd per curiam sub nom. Memorex Corp. v. IBM Corp.*, 636 F.2d 1188 (9th Cir.1980). We do not read § IV(E)(i) to "put[] judges and juries in the unwelcome position of designing computers." IX Areeda, *Antitrust Law* p 1700j at 15 (1991). The question is not whether the integration is a net plus but merely whether there is a plausible claim that it brings some advantage. Whether or not this is the appropriate test for antitrust law generally, we believe it is the only sensible reading of § IV(E)(i).

On the facts before us, Microsoft has clearly met the burden of ascribing facially plausible benefits to its integrated design as compared to an operating system combined with a stand-alone browser such as Netscape's Navigator.¹⁵ Incorporating browsing [331 U.S.App.D.C. 137] functionality into the operating system allows applications to avail themselves of that functionality without starting up a separate browser application. J.A. 944, 965.¹⁶ Further, components of IE 3.0 and even more IE 4--especially the HTML reader--provide system services not directly related to Web browsing, enhancing the functionality of a wide variety of applications. J.A. 607-22, 1646-48. Finally, IE 4 technologies are used to upgrade some aspects of the operating system unrelated to Web browsing. For example, they are used to let users customize their "Start" menus, making favored applications more readily available. J.A. 490-95; 1662-64. They also make possible "thumbnail" previews of files on the computer's hard drive, using the HTML reader to display a richer view of the files' contents. J.A. 1664-69. Even the Department apparently concedes that integration of functionality into the operating system can bring benefits; responding to a comment on the proposed 1994 consent decree (which the Department published in the Federal Register as required by the Tunney Act), it stated that "a broad injunction against such behavior generally would not be consistent with the public interest." 59 Fed.Reg. 59426, 59428 (Nov. 17, 1994).

The conclusion that integration brings benefits does not end the inquiry we have traced out. It is also necessary that there be some reason Microsoft, rather than the OEMs or end users, must bring the functionalities together. See X Areeda, *Elhauge & Hovenkamp, Antitrust Law* p 1746b at 227; p 1747 at 229. Some more subtleties emerge at this stage, parallel to those encountered in determining the integrated status of Windows 95. Microsoft provides OEMs with IE 4 on a separate CD-ROM (a fact to which the Department attaches great significance). It might seem, superficially, that the OEM is just as capable as Microsoft of combining the browser and the operating system.

But the issue is not which firm's employees should run particular disks or CD-ROMs. A program may be provided on three disks--Windows 95 certainly could be--but it is not therefore three programs which the user combines. Software code by its nature is susceptible to division and combination in a way that physical products are not; if the feasibility of installation from multiple disks meant that the customer was doing the combination, no software product could ever count as integrated. The idea that in installing IE 4 an OEM is combining two stand-alone products is defective in the same way that it would be nonsensical to say that an OEM installing Windows 95 is itself "combining" DOS functionality and a graphical interface. As the discussion above indicates, IE 3 and IE 4 add to the operating system features that cannot be included without also including browsing functionality. See J.A. 1661-68. Thus, as was the case with Windows 95, the products--the full functionality of the operating system when upgraded by IE 4 and the "browser functionality" of IE [331 U.S.App.D.C. 138] 4--do not exist separately.¹⁷ This strikes us as an essential point. If the products have no separate existence, it is incorrect to speak of the purchaser combining them. Purchasers who end up with the Windows 95/IE package may have installed code from more than one disk; they may have taken the browser out of hiding;¹⁸ they may have upgraded their operating system--indeed, Netscape characterizes the installation of IE 4 as "really an OS [operating system] upgrade." J.A. 589. But they have not combined two distinct products.

What, then, counts as the combination that brings together the two functionalities? Since neither fully exists separately, we think the only sensible answer is that the act of combination is the creation of the design that knits the two together. OEMs cannot do this: if Microsoft presented them with an operating system and a stand-alone browser application, rather than with the interpenetrating design of Windows 95 and IE 4, the OEMs could not combine them in the way in which Microsoft has integrated IE 4 into Windows 95. They could not, for example, make the operating system use the browser's HTML reader to provide a richer view of information on the computer's hard drive, J.A. 1665--not without changing the code to create an integrated browser. This reprogramming would be absurdly inefficient. Consequently, it seems clear that there is a reason why the integration must take place at Microsoft's level. This analysis essentially replays our comparison of Windows 95 to a bundle of MS-DOS and Windows 3.11 and concludes that the Windows 95/IE package more closely resembles Windows 95 than it does the bundle. The factual conclusion is, of course, subject to reexamination on a more complete record. On the facts before us, however, we are inclined to conclude that the Windows 95/IE package is a genuine integration; consequently, § IV(E)(i) does not bar Microsoft from offering it as one product.

* * *

A few words with respect to our colleague's separate opinion may clarify our position. Judge Wald suggests that "the prohibition and the proviso could reasonably be construed to state that Microsoft may offer an 'integrated' product to OEMs under one license only if the integrated product achieves synergies great enough to justify Microsoft's extension of its monopoly to an otherwise distinct market." Sep. Op. at 958. We are at a loss to understand how a section that (1) articulates a prohibition and (2) sets a limit on the reach of the prohibition¹⁹ can be read to state a balancing test. Apart from the lack of textual support, we think that a balancing test that requires courts to weigh the "synergies" of an integrated product against the "evidence of distinct markets," Sep. Op. at 959, is not feasible in any predictable or useful way. Courts are ill equipped to evaluate the benefits of high-tech product design,²⁰ and even could they place [331 U.S.App.D.C. 139] such an evaluation on one side of the balance, the strength of the "evidence of distinct markets," proposed for the other side of the scale, seems quite incommensurable. Both Jefferson Parish and Eastman Kodak use their "distinct markets" analysis in a binary fashion: markets are distinct or they are not. See 466 U.S. at 21-22, 104 S.Ct. 1551, 504 U.S. at 462, 112 S.Ct. 2072. If, as the record suggests, Microsoft proposed modification of the integration proviso because of concern about "vague or subjective criteria," J.A. 760, an interpretation requiring courts to weigh evidence that establishes distinctness (or does not) against a sliding scale of net synergistic value looks like the most total transvaluation one can imagine.

Institutional competence may not have been foremost in the parties' minds in drafting the consent decree, and judicial inability to apply a test does not ipso facto mean that the parties did not intend it. But if they did intend a balancing test, they kept that intent well hidden. Nothing in their contemporaneous conduct (or in the conduct of anyone, at any time) suggests that they contemplated a balancing inquiry. Windows 95 was not subjected to any such analysis, though the markets it unified were substantial and obviously distinct. J.A. 790-96. Indeed, one might think that an especially compelling case would be required to "justify Microsoft's extension of its monopoly," Sep. Op. at 958, via Windows 95. Windows 95 leveraged Microsoft's Windows 3.11 market power into the operating system market, where network externalities are most apparent. See Microsoft, 56 F.3d at 1451. According to the separate opinion, Windows 95 should have required the utmost justification. But nothing suggests that it was analyzed that way, and it seems more likely that it passed muster not because the synergies of its integration outweighed the evidence of distinct markets but because it was, simply, integrated.

The view expressed in the separate opinion seems sure to thwart Microsoft's legitimate desire to continue to integrate products that had been separate--and hence necessarily would have been provided in distinct markets. By its very nature "integration" represents a change from a state of affairs in which products were separate, to one in which they are no longer. By focusing on the historical fact of separate provision, the separate opinion puts a thumb on the scale and requires Microsoft to counterbalance with evidence courts are not equipped to evaluate. We do not think that this makes sense in terms of the text of the consent decree, the evidence of the parties' intents, the values the decree was presumably intended to promote, or the competence of the judiciary.

* * *

At this stage, then, the Department has not shown a reasonable probability of success on the merits. Given this failure, there is no reason to allow the preliminary injunction to remain in effect pending a proper hearing, and we reverse the district court's grant.

V.

Though the proceedings below may continue, they must do so without the preliminary injunction. With respect to the continuation, Microsoft argues that the "blanket" reference to a special master violates Article III, and, in the alternative, that the case does not present the exceptional circumstances required under Federal Rule of Civil Procedure 53(b)²¹ and *La Buy v. Howes Leather Co.*, 352 U.S. 249, 77 S.Ct. 309, 1 L.Ed.2d 290 (1957), to justify a nonconsensual reference. Future developments may moot this problem. In view of our interpretation of the consent decree, tentative though it be, see *University of Texas v. Camenisch*, 451 U.S. 390, 395, 101 S.Ct. 1830, 68 L.Ed.2d 175 (1981); *Taylor v. FDIC*, 132 F.3d 753, 766 (D.C.Cir.1997), the Department may well regard further pursuit of the case as unpromising, especially given the alternate avenues [331 U.S.App.D.C. 140] developing in its recently launched separate attacks on Microsoft's practices, Nos.98-1232 and 98-1233. But no such mooting has yet occurred. Accordingly, we address the questions of whether mandamus is available to correct the asserted illegality in the reference and, if so, whether it should issue in this case. We answer yes to both.

The Department claims that mandamus jurisdiction is lacking. Its primary theory is evidently that an unlawful reference can be reached by mandamus only if it is so outrageous as to fail to "comport[] with Article III." Supplemental Br. of United States 9. But *La Buy*, the Supreme Court's authoritative pass at the use of mandamus to correct illegal references, rests simply on the presence of "an abuse of [the judge's] power under Rule 53(b)," 352 U.S. at 256, 77 S.Ct. 309, and on that abuse being "clear," *id.* at 257, 77 S.Ct. 309. To be sure, *La Buy* observed that the court of appeals there confronted a district court "practice" of freewheeling references to masters: "[T]here is an end of patience." *Id.* at 258, 77 S.Ct. 309. But we have explicitly rejected the idea that mandamus is available only to correct "persistent disregard" of the limits on references. *In re Bituminous Coal Operators' Ass'n*, 949 F.2d 1165, 1168 n. 4 (D.C.Cir.1991).

Of course it may be that the boundaries of Rule 53(b) and Article III are close, so that the *La Buy* Court, in addressing the Rule 53 "exceptional condition[s]" criterion, was actually finding unconstitutional conduct. If true, this helps the Department not at all. If mandamus is available only to correct unconstitutional abdications of Article III power, but a clear abuse of discretion under Rule 53 amounts to such an abdication, we may properly exercise mandamus jurisdiction if we find the same sort of clear abuse of discretion that the *La Buy* Court found.

It is objected that a challenge at the end of the proceeding provides ample remedy, and black-letter mandamus law tells us that such adequacy of remedy defeats mandamus. *In re Minister Papatreou*, 139 F.3d 247, 250 (D.C.Cir.1998) (discussing mandamus criteria). See also *Stauble v. Warrob, Inc.*, 977 F.2d 690, 693 & n. 4 (1st Cir.1992) (dictum to effect that "improvident" reference presents no danger of irreparable harm); *In re Thornburgh*, 869 F.2d 1503, 1508 (D.C.Cir.1989) (reference to a master for purposes of determining relief is not an "abdication of the total judicial power" such as to justify mandamus). But the Court's action in *La Buy* appears necessarily to depend on the view that, at least at some point, even the temporary subjection of a party to a Potemkin jurisdiction so mocks the party's rights as to render end-of-the-line correction inadequate.

On the merits, the Department defends the reference on three grounds. First, it asserts that it falls within the well-recognized category of references for purely remedial determinations, such as the accountings and computations of damages, which Rule 53(b) expressly permits. Second, it claims that the technological complexity of the case and need for speed constitute "exceptional condition[s]" under the Rule. And third, it says that the order contains an implicit reservation by the district court of a power of *de novo* review, and that that unstated reservation saves the order.

In saying that the reference was merely for purposes of supervising remediation the Department invokes the well-established tradition allowing use of special masters to oversee compliance. See generally *Apex Fountain Sales, Inc. v. Kleinfeld*, 818 F.2d 1089, 1097 (3d Cir.1987) (citing cases). But this is not such a situation. The issue here is interpretation, not compliance; the parties' rights must be determined, not merely enforced. The matters referred to the master are no more "remedial" than would be those of any total referral of a contract case. The concern about nonconsensual references turns on the determination of rights, not on a formalistic division of the juridical universe into pre-trial, trial and post-trial. It is for this reason that special masters may not decide dispositive pretrial motions. See *In re United States*, 816 F.2d 1083, 1090 (6th Cir.1987).

The Department also proposes that this is a case of such technological complexity as to be "exception[al]." So far as the meaning of the consent decree is concerned, that [331 U.S.App.D.C. 141] is clearly false; the words are in plain English, and if their meaning is not clear it is not because of some deep technological issue but because of uncertainties in the purposes of the parties that drafted the decree, the sort of uncertainties that pervade contract actions. As for application of that meaning, we have just stated our interpretation, an interpretation that we regard as grounded, as are the related antitrust doctrines, in a realistic assessment of the institutional limits of the judiciary. Application of our reading of § IV(E)(i) does not require a software expert; it precludes Microsoft from any purely artificial "bolting" of functionalities but is otherwise deferential to entrepreneurs' product design choices.²²

More broadly, if *La Buy* was not complex, with its six defendants and nearly 100 plaintiffs (87 in one suit, six in another), 27 pages of docket entries in one of the cases for preliminary pleas and motions, over 50 depositions, and intricate charges of monopolization and Robinson-Patman violations, 352 U.S. at 251-52, 77 S.Ct. 309, we see no reason to think of this case as especially complicated. In fact, it is very doubtful that complexity tends to legitimate references to a master at all. *La Buy* noted that the complexity of an antitrust case, rather than justifying a reference, "is an impelling reason for trial before a regular, experienced trial judge rather than before a temporary substitute appointed on an ad hoc basis and ordinarily not experienced in judicial work." *Id.* at 259, 77 S.Ct. 309.

Thus the only remaining question is whether some implicit district court reservation of a power of *de novo* review of the special master's report, as to both fact and law, could save the reference. First, we find no such implied reservation. The order itself recites that "the Special Master shall receive evidence and legal authority presented by the parties at such

times and places, and in such manner as he shall prescribe, and shall propose findings of fact and conclusions of law for consideration by the Court on the issues raised by this case." J.A. 1301 (emphasis added). The Department suggests that the use of "propose" is somehow helpful, and distinguishes the reference from that in *Bituminous Coal*, which invited "recommended findings of fact and conclusions of law." 949 F.2d at 1166 (emphasis added). The difference in wording is immaterial, and in any event a special master's findings and conclusions are always advisory. Thus, even if we thought that a reservation of de novo review could save the reference we would have to vacate it, subject to possible re-issuance with an unequivocal commitment to non-deferential review. But we think, in fact, that no such rescue mechanism is available.

Microsoft notes Rule 53(e)(2)'s instruction that in non-jury trials, "the court shall accept the master's findings of fact unless clearly erroneous." (emphasis added). It reads this, as have courts and commentators, as making deferential review mandatory. See, e.g., *Williams v. Lane*, 851 F.2d 867, 884 (7th Cir.1988); *Apex Fountain*, 818 F.2d at 1097; *In re Crystal Palace Gambling Hall*, 817 F.2d 1361, 1364 (9th Cir.1987); *In re United States*, 816 F.2d at 1087, 1088; 9A Charles A. Wright & Arthur R. Miller, *Federal Practice & Procedure* § 2605 at 670 (1995).

The Department counters with a footnote from *Stauble* to the effect that a district court may refer fundamental issues of liability if he affords de novo review. 977 F.2d at 698 n. 13. But compare *id.* at 698 n. 12 (explaining that, because the parties have agreed that if the reference were constitutionally deficient the remedy would be remand for a full trial before the district court, the court will leave for "another day" the possibility that a master's findings on liability might "perhaps be salvaged, even after appeal, by having the district court conduct a deeper, more participatory sort of review."). At most, however, the thought reflected in the *Stauble* footnote might save a reference from invalidation under the Constitution; [331 U.S.App.D.C. 142] that possibility would do little to make it any less the sort of clear abuse of discretion that is fatal under *La Buy*. The same is equally true of the observation in *United States v. Raddatz*, 447 U.S. 667, 683 n. 11, 100 S.Ct. 2406, 65 L.Ed.2d 424 (1980), saying that the Court itself, in the exercise of its original Article III jurisdiction, acts on the basis of special masters' reports. Clearly that practice tells us nothing about the presence of a clear abuse of discretion under Rule 53(b).

We note some ambiguity on this point in our decision in *Bituminous Coal*. Our concluding directive told the judge to "revise his order of reference ... and to decide de novo, without deferring to a special master, all potentially dispositive questions of fact or law." 949 F.2d at 1169. The Department thinks that this implicitly endorsed the possibility of a non-deferential reference. We think not. In *Bituminous Coal* we rejected the coal operators' suggestion that "any unconsented-to reference would constitute an abuse of judicial power," *id.* (emphasis added), but our rejection of that broad claim was based not on variations in scope of district court review but on our endorsement of the established and legitimate practice of using unconsented-to references for pretrial preparation or for implementation of remedies, *id.* And in the introductory summary of our disposition we said that the judge must "revise the order of reference to reserve for himself, and not delegate to the special master, the core function of making dispositive rulings, including findings of fact and conclusions of law on issues of liability." *Id.* at 1166. In short, when we said in *Bituminous Coal* that we were granting the writ "not because the district judge simply abused his discretion, but because he has no discretion to impose on parties against their will 'a surrogate judge,'" *id.* at 1168 (citations omitted), we effectively ruled out nonconsensual references in nonjury cases except as to peripheral issues such as discovery and remedy. Compare *In re Armco, Inc.*, 770 F.2d 103, 105 (8th Cir.1985) ("Beyond matters of account, difficult computation of damages, and unusual discovery, it is difficult to conceive of a reference of a nonjury case that will meet the rigid standards of the *La Buy* decision.") (internal quotations omitted).

In short, finding the case devoid of anything remotely "exceptional" within the meaning of Rule 53(b), we believe the reference to a master must be vacated. We do not, accordingly, reach Microsoft's claims that the specific referee is biased or has conducted the proceedings on referral improperly.

VI.

The preliminary injunction was issued without adequate notice and on an erroneous reading of § IV(E)(i) of the consent decree. We accordingly reverse and remand. The reference to the master was in effect the imposition on the parties of a surrogate judge and either a clear abuse of discretion or an exercise of wholly non-existent discretion. We grant mandamus to vacate the reference.

So ordered.

WALD, Circuit Judge, concurring in part and dissenting in part:

I depart from my colleagues only as to their interpretation of the consent decree, which I believe unnecessarily narrows the scope of the inquiry that the district court may conduct on remand. First, the majority opinion appears to decide that there is only one reasonable interpretation of section IV(E)(i), notwithstanding the fact that we are remanding for further factual development that may well be relevant to the most faithful interpretation of the section. Second, although the majority claims to have rooted its interpretation in antitrust law in accordance with the intent of the parties, it interprets section IV(E)(i) in a way that is, in fact, inconsistent with at least some governing precedent. For these reasons, I write separately to suggest that there may be an interpretation of section IV(E)(i) more consonant with the intent of the drafters and the weight of antitrust law. If facts are found on remand to support such an alternative interpretation, it should not be foreclosed by the majority opinion.

Under the majority's interpretation, the proviso of section IV(E)(i), which says that [331 U.S.App.D.C. 143] section IV(E)(i) "in and of itself shall not be construed to prohibit Microsoft from developing integrated products," is too safe a harbor with too easily navigable an entrance: So long as Microsoft has created a design to combine functionalities in a way that offers the ultimate user some "plausible" advantage otherwise unavailable, Microsoft may require OEMs to install the resulting creation in its entirety, without fear of running aground on the main prohibition of section IV(E)(i) (which prohibits Microsoft from entering into any license agreement "in which the terms of that agreement are expressly or impliedly conditioned upon" the licensing of any "other product"). To my mind, this reading does not impose nearly enough scrutiny on "integration" and renders the central prohibition of section IV(E)(i) largely useless. Cf. *Beal Mortgage, Inc. v. FDIC*, 132 F.3d 85, 88 (D.C.Cir.1998) (noting the "cardinal interpretive principle that we read a contract to give meaning to all of its provisions and to render them consistent with each other") (internal quotation omitted). The majority's interpretation would not, for example, appear to prevent Microsoft from requiring OEMs to license the right to sell computer peripherals (e.g., mice) as a condition of licensing Windows 95 so long as Microsoft had the prescience to include code in Windows 95 that made the cursor more responsive to the end-user's touch than it would be with other mice. I think the majority would agree, however, that under any reasonable reading of section IV(E)(i), the tying of mice to Windows 95 would clearly be prohibited.¹ I fail to see why the analysis should be so different for software than for peripherals or why our "evaluation of a claim of integration must be [any more] narrow and deferential," *Maj. Op.* at 949-50, for software than for other computer-related products. See, e.g., *Firestone Tire & Rubber Co. v. Bruch*, 489 U.S. 101, 112, 109 S.Ct. 948, 103 L.Ed.2d 80 (1989) (courts construe contractual provisions "without deferring to either party's interpretation"). Our role, after all, is to interpret the consent decree as we would a contract: in a manner that is "grounded in the text of the agreement and contemporaneous understandings of its purposes, not in our own conception of wise policy." *United States v. Western Elec. Co., Inc.*, 846 F.2d 1422, 1427 (D.C.Cir.1988).

Another--some might say more--reasonable reading of section IV(E)(i) would give much greater weight to the main prohibition of the section. On its face, that prohibition forbids Microsoft from requiring OEMs to accept under one agreement any offering that is in reality two products: a "Covered Product" and, for purposes of this case, an "other product." The proviso, on the other hand, permits Microsoft to develop and license "integrated" products.² Read together, I think the prohibition and the proviso [331 U.S.App.D.C. 144] could reasonably be construed to state that Microsoft may offer an "integrated" product to OEMs under one license only if the integrated product achieves synergies great enough to justify Microsoft's extension of its monopoly to an otherwise distinct market.

As I explain below, and as I read the majority opinion to agree, the consent decree was drafted against a backdrop of antitrust law. Under antitrust law, two products are considered distinct if there exists "sufficient consumer demand so that it is efficient for a firm to provide [the first product] separately from [the second]." *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 462, 112 S.Ct. 2072, 119 L.Ed.2d 265 (1992). The difficulty in this case is that technological evolution can change the boundaries of what is "efficient." For example, *Eastman Kodak* cites cameras and film as examples of two functionally linked products for which there exist separate markets. See *id.* at 463, 112 S.Ct. 2072. But antitrust law presumably would not bar the development of digital cameras, which do not require film in any conventional sense.

Thus, antitrust law cannot avoid determining whether a particular technological development has occurred because it is efficient or merely because it permits a monopolist to extend its monopoly to a new market. Software code is a particularly stark example of why such analysis is essential if antitrust concepts are to survive at all. Here, the majority effectively exempts software products from antitrust analysis by stating that "[s]oftware code by its nature is susceptible to division and combination in a way that physical products are not." *Maj. Op.* at 948. But this to me is an argument for closer, rather than more relaxed, scrutiny of Microsoft's claims of integration. An operating-system designer who wished to turn two products into one could easily commingle the code of two formerly separate products, arranging it so that "Windows 95 without IE's code will not boot," *id.* at 949 n. 11, so that Windows 95 without Internet Explorer would "represent a disabled version of Windows 95," *id.* at 948, and so that Internet Explorer instructs the Add/Remove function to leave so much of that program in place that "four lines of programming" will suffice to activate it, see *id.* at

952 n. 17. This is not to say that commingling of code is per se pernicious or even suspicious. Rather, the point is that commingling alone is not sufficient evidence of true integration; the courts must consider whether the resulting product confers benefits on the consumer that justify a product's bridging of two formerly separate markets.

Although this task is difficult, it is by no means the impossible project that the majority suggests. As I explain below, traditional antitrust analysis, and the usual methods of the law, provide the courts with a range of ways to address the ultimate question of efficiency. See, e.g., *PSI Repair Servs., Inc. v. Honeywell, Inc.*, 104 F.3d 811, 817 (6th Cir.1997), cert. denied, --- U.S. ---, 117 S.Ct. 2434, 138 L.Ed.2d 195 (1997) (citation omitted) ("While we are mindful of the various efficiency gains that can accrue to both suppliers and consumers from bundling certain products together, we are confident that the antitrust laws provide the tools to distinguish between meritorious and non-meritorious claims."). As I see it, the efficiency calculus takes two factors into account. The first is evidence that there are real benefits to the consumer associated with integrating two software products; I call these benefits "synergies."³ The second is independent evidence, of the type that is usually employed in antitrust analysis, that a genuine market exists for the two products provided separately. For example, Windows 95 includes a [331 U.S.App.D.C. 145] built-in calculator program with relatively few functions. Although there may be few synergies associated with building this program into the operating system, there is also not likely to be much of a market for this program provided separately, and this factor must be taken into account. Market evidence of demand for independent products will spare the courts from the need to speculate in the abstract about considerations of efficiency.

Taken together, then, these two factors generate a balancing test. The greater the evidence of distinct markets, the more of a showing of synergy Microsoft must make in order to justify incorporating what would otherwise be an "other" product into an "integrated" whole. If the evidence of distinct markets is weak, then Microsoft can get by with a fairly modest showing (although perhaps not the minimal showing required by the majority). But if there are clearly two distinct markets, then Microsoft would need to demonstrate substantial synergies in order to compel OEMs to accept a new "integrated" product that bridges those markets. In other words, the decree does not purport to chill Microsoft's technological development of its products by prohibiting a product outright merely because it incorporates new features--the proviso makes clear that Microsoft is free to design such products and to market their benefits to OEMs such that OEMs overwhelmingly choose the new product over a competitor's product.⁴ The proviso thus becomes a safe harbor only for those integrations in which the "other product" has been (legitimately) technologically subsumed in a greater whole.⁵

Thus, the real question for purposes of determining if a violation of the decree has taken place is whether a new combination of formerly separate functionalities still contains an "other product" or if the two functionalities have been legitimately blended, or "integrated," and so have lost their former identities and become one product to which the prohibition no longer applies. (This, of course, is a factual question to be explored on remand.) As I have already suggested, and as the majority agrees, given the context in which section IV(E)(i) arose, it is appropriate to look to antitrust law as a guide to determining when such integration occurs. Although the majority opinion claims that its construction is consistent with antitrust law, see *Maj. Op.* at 951, it does not, in my view, give due weight to the Supreme Court's holding in *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S. 2, 104 S.Ct. 1551, 80 [331 U.S.App.D.C. 146] L.Ed.2d 2 (1984), the leading guide to the separate product determination.⁶ In *Jefferson Parish*, the Court considered whether anesthesiological services, which a hospital had required patients to take only from certain anesthesiologists, were in fact separate products from the other services provided by the hospital or, rather, were part of what the hospital claimed was a "functionally integrated package of services." *Id.* at 19, 104 S.Ct. 1551. In rejecting the hospital's argument that such a package did not involve a tying arrangement, the Court held that "the answer to the question whether one or two products are involved turns not on the functional relation between them, but rather on the character of the demand for the two items." *Id.* Thus, the fact that the hospital provided "the space, equipment, maintenance, and other supporting services necessary to operate the anesthesiology department," purchased the necessary drugs and supplies, and furnished the required nursing personnel, *id.* at 6, 104 S.Ct. 1551, did not prevent a finding of separateness, nor did the district court's conclusion that the hospital believed that a "closed system" anesthesiology department "resulted in the best quality of patient care." *Hyde v. Jefferson Parish Hosp. Dist. No. 2*, 513 F.Supp. 532, 540 (E.D.La.1981). In other words, despite the overlap between the services provided by the hospital and those provided by the anesthesiologist, and despite the claimed benefits of an "integrated" relationship, the Court held that the proper focus of analysis was whether the arrangement tied two distinct markets for products that are separate from the buyer's perspective. See *Jefferson Parish*, 466 U.S. at 19-20, 104 S.Ct. 1551 (citing *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594, 73 S.Ct. 872, 97 L.Ed. 1277 (1953), and *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 89 S.Ct. 1252, 22 L.Ed.2d 495 (1969)). It is not clear to me why this analysis should be markedly less applicable in the technological context; indeed, the post-*Jefferson Parish* trend is to apply its test even in the technological realm. See, e.g., *Allen-Myland, Inc. v. International Bus. Machs. Corp.*, 33 F.3d 194, 211-12 (3d Cir.1994) (computer parts and installation); *Service & Training, Inc. v. Data Gen. Corp.*, 963 F.2d 680, 684 (4th Cir.1992) (diagnostic software and maintenance/repair service); *Digidyne Corp. v. Data Gen. Corp.*, 734 F.2d 1336,

1339 (9th Cir.1984) (central processing units and operating system); cf. *Jefferson Parish*, 466 U.S. at 25 n. 42, 104 S.Ct. 1551 ("In the past, we have refused to tolerate manifestly anticompetitive conduct simply because the health care industry is involved.").

The tying analysis is, of course, a pragmatic one. For example, no one would claim that tying law was violated by the practice of selling shoes in pairs despite the possible existence of some market for only left shoes (among those with only one foot, for example, or with differently sized feet). Likewise, it is in all likelihood not a tying violation for *Jefferson Parish's* hospital to require that patients accept the hospital's receptionists (instead of bringing their own) and accept the cleaning services and meals provided in their rooms (instead of making other arrangements) and to charge patients for these services. This is so even though there might be a limited group of patients who would prefer to make their own arrangements for receptionists, cleaning, and meals. Cf. *Jefferson Parish.*, 466 U.S. at 22 n. 36, 104 S.Ct. 1551 (noting that the antitrust analysis might differ for "radiologists, pathologists, and other types of hospital-based physicians"); see also *Jack Walters & Sons Corp. v. Morton Bldg., Inc.*, 737 F.2d 698, 703 (7th Cir.1984) (noting that "[t]he practice has been to classify a product as a single product if there are rather obvious economies of joint provision"). In the case of the shoes, the receptionist, and the cleaning, a judgment is made that the benefits of joint provision clearly predominate over what is undoubtedly a minimal separate market (if one can be said to exist at all). In the case of the anesthesiologist, by contrast, the Court found that the claimed benefits--24-hour anesthesiology coverage, [331 U.S.App.D.C. 147] flexible scheduling, and facilitation of work routine, professional standards, and equipment maintenance--were not sufficient to justify joint provision because there was a very substantial market for anesthesiologists' services and because these benefits could be achieved without the forced tie (by, for example, promoting the benefits of the hospital's anesthesiologists to patients and setting standards of compatibility). See *Jefferson Parish*, 466 U.S. at 25 n. 42, 104 S.Ct. 1551. Under this doctrine, then, an "integrated" product cannot simply be one where some benefit exists as a result of joint provision, since the hospital easily met this standard. Rather, "integration" must mean something more: a combination of functionalities in which the synergies created predominate over the existence of a separate market--in other words, where the benefits of the combination dissuade consumers from seeking and suppliers from providing the alleged "tied" product.⁷

This alternative interpretation of section IV(E)(i) also accommodates the majority's "paradigm" case. The mere provision of Windows 3.11 and DOS 6.22 as a single product may have created some benefits--reduction of transaction costs, guaranteed compatibility, and a single source of customer support services, for example. These benefits were not, however, enough to overwhelm the existence of a separate operating system market--indeed, the very presence of Novell's product as an operating system to be used with Windows 3.11 suggests the existence of such a market. See, e.g., J.A. 845 (DG IV Statement of Objections) ("Such tying affects the competitive freedom of the licensee to find a better substitute or obtain better terms for the operating system to be used with Windows."). Windows 95, however, is a different matter. In that case, the whole is clearly greater than the sum of its parts--as the majority notes, "it is not simply a graphical user interface running on top of MS-DOS." Maj. Op. at 949. And it is clear on the present record that Microsoft, at least, understood Windows 95 to provide such benefits. See, e.g. J.A. 1101 (Microsoft's "Windows 95 Feature Review") ("When you first boot Windows 95 it is immediately apparent that the old world of Windows running on top of MS-DOS is no more."). Thus, the synergistic benefits appear to have been large enough so that it would have been reasonable for DOJ to agree to treat Windows 95 as an integrated product.⁸

The majority's interpretation, however, departs from this precedent by accepting any "plausible claim" that the combination (i.e., the design) offers "some advantage." Maj. Op. at 950-51. Of course, both the majority's interpretation and my alternative proposal would discredit any specious claims of integration--Microsoft's claim that it could simply put two disks in the same box and claim integration, for example, see *id.* at 947-48, would hardly merit a second thought. But the majority's considerable deference to Microsoft's plausible claims of advantage, coupled with Microsoft's privileged knowledge of the inner workings of its operating system, barely raises the bar of section IV(E)(i) above ground level. It is difficult to imagine how Microsoft could not conjure up some technological advantage for any currently separate software product it wished to "integrate" into the operating system.⁹ And for [331 U.S.App.D.C. 148] the majority, the chase ends there: Internet Explorer, it contends, shares code with the operating system in a way that other browsers do not, and therefore it is integrated. But the fact that parts of Internet Explorer share code with the operating system and thus with other applications should not end the analysis any more than did the fact that the anesthesiologists in *Jefferson Parish* shared hospital equipment and personnel with the hospital and its staff (or that the hospital could identify some minor practical benefits to requiring the use of only certain anesthesiologists). The analysis must also consider whether Internet Explorer is a separate product under antitrust law, that is, whether "consumers differentiate between [Internet Explorer] and [Windows 95]" such that consumers desire to purchase--and hence that manufacturers desire to supply--a substitute for Internet Explorer from another manufacturer; in other words, whether there is "a distinct product market in which it is efficient to offer [the tied product] separately from [the tying product]." *Jefferson Parish*, 466 U.S. at 22, 104 S.Ct. 1551; see also *Digidyne*, 734 F.2d at 1339 ("[t]he undisputed facts summarized in the district court's opinion establish that a demand existed for NOVA instruction set CPUs [central

processing units] separate from defendant's RDOS [operating system], and that each element of the NOVA computer system could have been provided separately and selected separately by customers if defendant had not compelled purchasers to take both"). Whether such a market exists, and whether it is significant enough to outweigh the particular synergies associated with integrating IE 3.0 and/or IE 4.0 into Windows 95, is, of course, a factual determination within the province of the district court. Relevant indicators in the market analysis, however, would surely include (1) whether manufacturers of other operating systems require OEMs to include a particular browser, see, e.g., *Jefferson Parish*, 466 U.S. at 23 n. 39, 104 S.Ct. 1551 (noting that "other hospitals often permit anesthesiological services to be purchased separately"); X AREEDA, *ANTITRUST LAW* p 1746, at 225 (1996) (suggesting comparison of alleged tie with practices in analogous competitive markets); (2) whether Microsoft's own actions reflect a perception of a competitive market for "Internet Explorer" separate from the market for Windows 95, see, e.g., *Allen-Myland*, 33 F.3d at 208-09 (noting probative value of internal reports in determining distinct product markets); and even (3) the very existence of competitor browser manufacturers, see, e.g., *Eastman Kodak*, 504 U.S. at 462, 112 S.Ct. 2072 (noting that "the development of the entire high-technology service industry is evidence of the efficiency of a separate market for service"). The majority opinion, however, relies on none of these considerations. By discounting the relevance of such analysis, the majority in fact shorts traditional antitrust law.

Despite the plausibility of this alternative interpretation, the extent to which antitrust law was intended to inform the interpretation of the decree--specifically the interpretation of the terms "integrated product" and "other product"--is another question best left open to the district court on remand. Everyone agrees, I believe, that section IV(E)(i) of the decree is ambiguous--indeed, had it been unambiguous, the district court could have fished or cut bait, i.e., it could have determined either that Microsoft's actions constituted contempt or that they did not violate the decree at all. Thus, I do not read the majority opinion to say at any point that there is a plain meaning of section IV(E)(i) that can be located in the text alone. To the contrary, we are relegated to ordinary principles of contract law: searching for the parties' intent and guided in that adventure by "conventional 'aids to construction,' including [331 U.S.App.D.C. 149] the 'circumstances surrounding the formation of the consent order, any technical meaning words used may have had to the parties, and any other documents expressly incorporated in the decree.' " *United States v. Western Elec. Co.*, 894 F.2d 430, 434 (D.C.Cir.1990) (quoting *United States v. ITT Continental Baking Co.*, 420 U.S. 223, 238, 95 S.Ct. 926, 43 L.Ed.2d 148 (1975)). Under these principles, the interpretation of an ambiguous contract involves factual findings as to the parties' intent. See, e.g., *Bennett Enters., Inc. v. Domino's Pizza, Inc.*, 45 F.3d 493, 497 (D.C.Cir.1995); *Carey Canada, Inc. v. Columbia Cas. Co.*, 940 F.2d 1548, 1553-54 (D.C.Cir.1991). In non-plain meaning cases such as this one, appellate courts generally decline to embark on their own factfinding mission, deferring to the district court's role as the primary factfinder and reviewing its findings only for clear error. See, e.g., *United States v. Insurance Co. of N. Am.*, 131 F.3d 1037, 1042-43 (D.C.Cir.1997) (declining to determine intent of parties to contract on the basis of incomplete record and remanding for further findings). While the district court below did conclude that "[r]eading [section] IV(E)(i) in light of its avowed purpose raises a logical inference that the parties anticipated the use of [tying law] antitrust precedents in determining the application of [section IV(E)(i)] to the conduct the government challenges here," *United States v. Microsoft Corp.*, 980 F.Supp. 537, 542 (D.D.C.1997)--a conclusion that suggests that *Jefferson Parish*, decided well before the parties' agreement, is indeed relevant to the construction of the decree--it is not inconceivable that, given notice and an adequate opportunity to present evidence and arguments, the parties will succeed in persuading the district court otherwise.¹⁰ The majority opinion, however, leaves little room for such efforts--its interpretation seems clearly meant to be the last word.¹¹

Finally, and relatedly, I note that when the parties' contemporaneous understanding of section IV(E)(i) is ultimately revealed, there is further work to be done on how the parties intended that understanding to be applied. Should the district court conclude that whether something is an "other product" depends on the existence of a separate market for that product, it must still determine how that "something" is defined--in this case, "Internet Explorer." Here, again, the majority relies heavily on a presumption that "Internet Explorer" contains code that upgrades the operating system as well as code that enables end-users to access the Internet and therefore concludes that there is no "separate" product for any tie-in analysis. See *Maj. Op.* at 952.¹² The validity of that perception is not so evident to me. The fact that the supplies and equipment that made the anesthesiologist's job possible in *Jefferson Parish* remained at the hospital--that, in a manner of speaking, the anesthesiologist was something of an interface between the end-user patient and the hospital's "operating system"--did not prevent the Court from concluding that his portion of the service constituted a separate product. Unfortunately, perhaps due to the irregular nature of the preliminary injunction proceedings, the district court made little in the way of findings concerning what the linchpin product "Internet Explorer" is intended to encompass.¹³ It would not be unreasonable, [331 U.S.App.D.C. 150] as the prior discussion suggests, to approach the problem from the perspective of a typical end-user, who most likely regards "Internet Explorer" as a particular vehicle for accessing information on the Internet, regardless of the underlying code associated with that process. The fact that, as the majority suggests, see *Maj. Op.* at 951-52, "Internet Explorer" distributes certain code to the operating system may simply suggest that some or all of this code should not be considered part of "Internet Explorer" at all but part of the operating system. Or perhaps the work that this code does could be done equally well by similar code written by

Netscape or some other competitor, in which case the code's function is not necessarily an operating system function at all.¹⁴ Which approach to the meaning of "product" was the contemporaneous understanding of the parties to the decree, however, remains to be determined.

Furthermore, the record suggests that many of the benefits that the majority asserts for the incorporation of Internet Explorer into Windows 95, including customizing of "Start" menus and "thumbnail" previews, see *id.* at 950-51, are provided only by Internet Explorer 4.0 and not by Internet Explorer 3.0. See, e.g., J.A. 490-95, 1664-69. The majority seems to conclude that IE 3.0 and Windows 95 are "integrated" on the basis of little or no evidence. Should more evidence on this point come to light, the district court thus cannot be bound by the majority's conclusions. As to IE 4.0, the district court's preliminary conclusions seemed to hinge on the fact that Microsoft had offered the program only on a separate disk and not on the technology involved, see Microsoft, 980 F.Supp. at 544, thus suggesting that more factfinding also needs to be done as to IE 4.0.

Because I believe there is significant further factfinding as to intent and operation to be accomplished by the district court on remand, I would not rule out its authority to reissue a preliminary injunction.¹⁵ That is why I am troubled by the seemingly authoritative nature of the interpretation of section IV(E)(i) in the majority opinion, which would appear to foreclose any other interpretation of the section and proviso that might evolve in further proceedings and justify either a preliminary or a permanent injunction. To that extent, I respectfully dissent from the majority opinion.

* * *

Footnotes:

1. Similarly, Sun Microsystems's "Java" programming language allows programmers to write applications that will run on any computer, regardless of the operating system, as long as certain Java-related software (a Java "virtual machine" and Java "class libraries") is present. Internet browsers incorporate the necessary Java-related software, and hence allow Java programs to live up to their "write once, run anywhere" billing

2. The Department's language suggests that two products, and indeed, two license agreements are at issue. See, e.g., the Department Br. at 4 ("Microsoft conditioned its OEM licenses to Windows 95 on OEMs' licensing Internet Explorer.") It is undisputed that OEMs enter into only one license agreement, which covers IE as part of Windows 95. J.A. 1274. Microsoft's central argument, of course, is that there is only one product. The terminology used in our introductory recitation of facts is of course not intended to resolve, or to reflect any resolution of, contested issues, and no inference as to those issues should be drawn from the wording of this section

3. Additionally, by allowing OEMs to conceal IE, rather than to refuse it, the remedy fits poorly with the Department's tying theory. A tie-in is not affected by the purchaser's ability to discard the tied good

4. Microsoft then grounded its objection on the fact that the Department had urged the court "not to permit discovery, not to conduct an evidentiary hearing and to decide the matter on the papers before the District Court." *Id.* at 12. These objections, however valid, are completely independent of the theory we address here. As we find the preliminary injunction procedurally defective on other grounds, we need not reach them

5. We have noted recently, and more than once, that the concept of a "remedial" statute is unhelpful. All statutes, unless purely declaratory, seek to "remedy" something about the pre-existing state of affairs. The cases seem bereft of references to "destructive" statutes. See *East Bay Municipal Utility Dist. v. United States Dep't of Commerce*, 142 F.3d 479, 484 (D.C.Cir.1998); *Ober United Travel Agency, Inc. v. United States Dep't of Labor*, 135 F.3d 822, 825 (D.C.Cir.1998)

6. The district court mentioned irreparable harm, but not in any terms suggesting focus on the relevant concern--whether denial of relief would result in harm to the competitive interests asserted by the government. It said that the Department is threatened with irreparable harm because "the cost of a compulsory unbundling of Windows 95 and IE in the future could be prohibitive," J.A. 1297, which seems rather more like a risk to Microsoft if it continues its current practice and ultimately loses in court

7. We agree with Judge Wald's suggestion, see *Sep. Op.* at 962-63, that there is something unusual about *de novo* review of a district court interpretation of an ambiguous provision of a consent decree. Consent decrees are generally interpreted as contracts. See *United States v. ITT Continental Baking Co.*, 420 U.S. 223, 236-37, 95 S.Ct. 926, 43 L.Ed.2d 148 (1975). Interpretation of an ambiguous contract term on the basis of extrinsic evidence is generally treated

as a question of fact, and the district court's findings as to the parties' intent are reviewed deferentially, i.e., reversed only for clear error. See, e.g., *NRM Corp. v. Hercules*, 758 F.2d 676, 682 (D.C.Cir.1985). This court, however, has regularly engaged in de novo review of district court interpretations of concededly ambiguous provisions which the parties sought to clarify with evidence from outside the decree itself. See, e.g., *United States v. Western Electric Co.*, 12 F.3d 225, 229, 231 (D.C.Cir.1993) (announcing de novo review despite admitted ambiguity); *United States v. Western Electric Co.*, 900 F.2d 283, 293, 296 (D.C.Cir.1990) ("Triennial Review") (same); see also *id.* at 294 (characterizing issue as "pure question of law"). Nor does the Supreme Court's opinion in *ITT*, which relies on the presence of ambiguity to distinguish *Armour*, see *ITT*, 420 U.S. at 238 & n. 11, 95 S.Ct. 926, give any indication of deference. Of course, de novo review of legal analysis is in principle compatible with deference to factual findings. See *Triennial Review*, 900 F.2d at 293-94 (explaining that "aside from fact-finding, we owe no deference to the district court's decisions"); *North Shore Laboratories Corp. v. Cohen*, 721 F.2d 514, 518-19 (5th Cir.1983) (reviewing de novo while also noting deference to factual findings of parties' intent). This mixed approach may be the correct one, although the centrality of intent would often make the deference swallow the de novo review, a result our cases do not seem to contemplate. But here it would amount to de novo review anyway, as the district court made no findings of fact as to intent to which we could defer

8. The indirect nature of the alleged tie may explain why § IV(E)(i) bars an agreement whose terms are "expressly or impliedly conditioned upon ... the licensing of any other Covered Product."

9. In rejecting the Department's use of functionality here we do not mean to suggest that it is never an appropriate criterion of identity. In some contexts it may be appropriate to treat as equivalent two products that supply the same functionality, if they meet the same demand. Computer programs written for different operating systems, however, do not seem to meet the same demand, so that acceptance of functionality as a sufficient criterion of identity would lead to odd results. Here, of course, the decree's acceptance of Windows 95 as a "product" rebuts the Department's view of what is forbidden; one possible explanation might be that functionality works as an initial screen for defining products, but one that is trumped by the "integrated products" proviso

10. The hospital in Jefferson Parish surely did not offer the tied good (anesthesia) separately from the tying good (surgery), but this fact played no role in the Court's decision

11. The same analysis would apply to peripherals. If, for example, Microsoft tried to bundle its mouse with the operating system, it would have to show that the mouse/operating system package worked better if combined by Microsoft than it would if combined by OEMs. This is quite different from showing that the mouse works better with the operating system than other mice do. Compare *Sep. Op.* at 957. See *X Areeda, Elhauge & Hovenkamp*, *Antitrust Law* p 1746b. Problems seem unlikely to arise with peripherals, because their physical existence makes it easier to identify the act of combination. It seems unlikely that a plausible claim could be made that a mouse and an operating system were integrated in the sense that neither could be said to exist separately. An operating system used with a different mouse does not seem like a different product. But Windows 95 without IE's code will not boot, J.A. 1623, and adding a rival browser will not fix this. If the add/remove utility is run to hide the IE 4 technologies, Windows 95 reverts to an earlier version, OEM service release ("OSR") 2.0. J.A. 1660-61

12. Thus of course we agree with the separate opinion that "commingling of code ... alone is not sufficient evidence of true integration." *Sep. Op.* at 958. Commingling for an anticompetitive purpose (or for no purpose at all) is what we refer to as "bolting."

13. The separate opinion seems to take this reluctance to engage in the evaluation of product design as deference to Microsoft's interpretation of the consent decree. See *Sep. Op.* at 957. It is nothing of the sort. We defer to neither party in interpreting the consent decree; in fact, we reject both parties' readings. We suggest here only that the limited competence of courts to evaluate high-tech product designs and the high cost of error should make them wary of second-guessing the claimed benefits of a particular design decision

14. The antitrust question is of course distinct. The parties agree that the consent decree does not bar a challenge under the Sherman Act

15. This issue is peripheral on the Department's interpretation of § IV(E)(i), and the Department may not have contested it as vigorously as it might. The guidance this opinion seeks to provide is limited to setting out the legal framework for analysis. The ultimate sorting out of any factual disputes is a different question, and one we of course cannot resolve on the limited record before us

16. It is possible, of course, for applications vendors to bring about this Microsoft-created integration by distributing IE with their applications, which is apparently a relatively common practice. See J.A. 953, 966. Distribution by application

vendors does not affect the conclusion that the integrated design brings benefits, nor does it suggest that IE has an existence apart from Windows 95. The consequence of this practice is simply that such applications upgrade the purchaser's operating system to the Windows 95/IE level. The customer's act of installing the application implements Microsoft's prior integration of IE into Windows 95

The record also suggests that there are some inefficiencies associated with application vendors' redistribution of IE code. Application vendors' affidavits assert that if the browser is installed in computers before sale, "installation of our product is faster, we have reduced product support issues, the perceived footprint (memory use) of our product is smaller, and in general customer perception of our product is better." J.A. 953, 966. Although the drawbacks of installation by applications vendors can be alleviated by OEMs' preinstalling an integrated operating system containing IE technologies, the drawbacks are not necessary consequences of a stand-alone design, but rather incidental costs of a particular method of bringing about the benefits of integration, namely, distribution of code by applications vendors. Thus they are not relevant to our comparison of the stand-alone and integrated designs.

17. Our colleague's separate opinion suggests that IE may be separated from Windows 95 by treating some or all of the code that supplies operating system functionality as part of the operating system. Sep. Op. at 15. But apart from that code, there is nothing more to IE than the four lines of programming required to summon browsing functionality from code that also supplies operating system functionality. J.A. 1654. Those four lines look more like a key to opening IE than anything that could plausibly be considered IE itself

18. The preliminary injunction, as construed by the parties' later stipulation, treats Microsoft as in compliance if it allows the options of (1) running the Add/Remove Programs utility with respect to IE 3.x and (2) removing the IE icon from the desktop and from the Programs list in the Start menu and marking the file IEXPLORE.EXE "hidden." See above at p. 7. The injunction's evidently unique status as a remedy for a "tying" complaint, requiring the defendant merely to allow an intermediary to hide the allegedly tied product, suggests the oddity of treating as separate products functionalities that are integrated in the way that Windows 95 and IE are

19. The proviso may be read to do this either by clarifying the concepts of "Covered Product" and an "other product" to prevent an "integrated" product from constituting a forbidden duo, or by carving out an exception for integrated products even if they otherwise represent such a duo. We do not believe that the choice of approach makes a substantive difference

20. Our colleague seems to hint that one way to perform this evaluation is to examine whether the integrated product "overwhelm[s]" the separate market. Sep. Op. at 961. But data on market performance will obviously not be available when the new product is introduced, and in any case, the overwhelming of the separate market is precisely what is feared and may simply indicate anticompetitive practices

21. The rule provides in relevant part: "A reference to a master shall be the exception and not the rule. In actions ... to be tried without a jury, save in matters of account and of difficult computation of damages, a reference shall be made only upon a showing that some exceptional condition requires it."

22. To the extent that adjudication may lead the court into deep technological mysteries, we note the court's power under Rule of Evidence 706 to appoint expert witnesses. Whether such an expert is appointed by agreement of the parties or not, the expert's exposure to cross-examination by both sides, see Rule 706(a), makes the device a far more apt way of drawing on expert resources than the district court's unilateral, unnoticed deputization of a vice-judge

1. The majority asserts that if Microsoft tried to bundle its mouse with the operating system, "it would have to show that the mouse/operating system package worked better if combined by Microsoft than it would if combined by OEMs," a test that is "different from showing that the mouse works better with the operating system than other mice do." Majority Opinion ("Maj. Op.") at 948 n.11. But this seems to me to misstate the majority's own test, which asserts that "the act of combination is the creation of the design that knits the two together" and not which firm's employees effect the physical combination. *Id.* at 951-952. If this is the case, then the majority's test would consider whether the design that "knits together" Microsoft's mouse and the operating system offers advantages unavailable through the combination of a competitor's mouse and the operating system. This is, I think, a standard easily met. For instance, Microsoft could develop a mouse with a patented, modestly useful feature, design its operating system to work best when used with a mouse that had this feature, and then require OEMs to buy the two products together. The mouse and the operating system would qualify as integrated under the majority's test. The majority says that IE 4.0 and Windows 95 are

integrated because the "full functionality of the operating system when upgraded by IE 4 and the 'browser functionality' of IE 4 ... do not exist separately." *Id.* at 951. Likewise, the full functionality of the patented mouse and Microsoft's mouse-friendly operating system would not exist separately; the two would be designed for each other, and their full functionality would only exist when combined. Thus, under the majority's test, Microsoft would have avoided the effect of section IV(E)(i) altogether, even if its patented mouse was of little extra value to the user. I would not think that the proviso was intended to swallow the consent decree in this way

2. The proviso states only that Microsoft is permitted to "develop" integrated products, but the parties agree that "develop" should not be limited to mere research and development

3. The majority questions the institutional competence of the courts to judge the level of synergy provided by an "integrated" product. See *Maj. Op.* at 949-50. By no means do I endorse routine judicial intervention in the details of product design. But I also do not endorse (as the majority comes close to doing) judicial abdication in the face of complexity. The courts are certainly capable of determining whether a particular integration offers any synergistic benefits at all and whether these benefits are minimal, significant, or great. As this is a factual determination, they may be guided in this effort by, for example, affidavits, consumer surveys, and other evidence presented by the parties as well as testimony from experts selected by the parties or by the court. Certainly this approach is preferable to the majority's proposal, under which antitrust law surrenders to any bona fide assertion of a "plausible" benefit of integration

4. During his tenure as special master in this case, Lawrence Lessig offered a similar, although not identical, interpretation of section IV(E)(i) in a letter that has been made part of the record in this appeal. See Letter from Lessig to Malone et al., January 19, 1998 (asserting that the prohibition of section IV(E)(i) forbids only tying through contract; it does not, as the proviso makes clear, forbid tying through technological efforts). The fact that Professor Lessig has proposed this quite plausible alternate interpretation of section IV(E)(i) does not, of course, suggest that his interpretation is the only acceptable one--that is a matter for the proceedings on remand to determine

5. The majority expresses puzzlement as to how a section "that (1) articulates a prohibition and (2) sets a limit on the reach of the prohibition" can be read to state a balancing test. *Maj. op.* at 947-48. As I read section IV(E)(i), its application turns on distinguishing two products from a single, integrated product. The section surely requires that the product be legitimately integrated; otherwise, section IV(E)(i) would have no force. One plausible interpretation of the decree is that it refers the court to antitrust law to decide whether a product is legitimately integrated; in these circumstances, the antitrust analysis requires balancing. For my part, I am at a loss to understand how a consent decree that is clearly intended to limit Microsoft's conduct could be read to impose so little scrutiny of that conduct

One might ask why, under my proposed reading, section IV(E)(i) contains a proviso at all. I think it possible that the proviso was intended, "in the intensely lawyered atmosphere surrounding this decree, to make assurance doubly sure," *United States v. Western Elec. Co., Inc.*, 12 F.3d 225, 238 (D.C.Cir.1993) (Williams, J., dissenting)--in other words, that it was a lawyerly redundancy. I do not think, however, that it is necessary to read the proviso as serving so limited a function. Under my reading, the proviso serves to clarify that the prohibition of section IV(E)(i) is not boundless--that a product is not barred simply because it contains new combinations of previously existing functionalities. The proviso thus functions to eliminate one possible reading of section IV(E)(i). Given that the proviso is cast in terms of interpretation--it says that section IV(E)(i) "shall not be construed" to bar integrated products--it is appropriate to accord it this limited, interpretive function.

6. The majority rejects DOJ's contention that a product is separate if Microsoft so treats it, see *Maj. Op.* at 953, but it does not address the government's associated contention that a product is separate if antitrust law so treats it, see *id.* at 948 (noting DOJ's citation of *Jefferson Parish*)

7. As to the majority's observation that a product is not "integrated" if OEMs could perform the integration equally well on their own, my only comment is that this is an obvious point, and I am unclear what it adds to the analysis. A synergy should only count as such if it has benefits that the purchaser could not achieve equally well on his own. For example, there are synergistic benefits to combining cookies and milk, but a consumer can achieve them perfectly well at home. Thus, a supermarket could not ordinarily invoke this synergy as a justification for requiring cookies and milk to be bought together

8. The majority objects that there is no evidence that Microsoft and DOJ subjected Windows 95 to a balancing analysis. *Maj. Op.* at 952-53. Because of the procedural posture of this case, however, there is little evidence of any kind in the record as to what the parties to the consent decree intended. There is certainly no indication that Microsoft and DOJ subjected Windows 95 to the majority's minimal test

9. The majority's test would seem to permit Microsoft to "integrate" word-processing programs, spreadsheets, financial-management software, and virtually any other now-separate software product into its operating system by identifying some minimal synergy associated with such "integration." In effect, the majority has fashioned a broad exemption from the antitrust laws for operating system design, apparently because an operating system is not like a peripheral, whose "physical existence makes it easier to identify the act of combination." Maj. Op. at 948 n.11. Surely, however, physical existence cannot serve as a limitation to the application of antitrust law--the provision of services, for example, is a mutable "product" without tangible existence and yet has often been the subject of antitrust analysis. See, e.g., *Jefferson Parish*, 466 U.S. 2, 104 S.Ct. 1551, 80 L.Ed.2d 2 (anesthesiological services); *Allen-Myland*, 33 F.3d 194 (installation of computer parts); *Service & Training*, 963 F.2d 680 (computer maintenance and repair services)

10. Indeed, the district court acknowledged that "[d]isputed issues of technological fact, as well as contract interpretation, abound as the record presently stands." *Microsoft*, 980 F.Supp. at 543

11. The majority's assertion that "the district court made no findings of fact as to intent to which we could defer," Maj. Op. at 945 n.7, makes restraint particularly appropriate

12. Notably, the majority's assertion to this effect relies on testimony presented by Microsoft during hearings on whether Microsoft had failed to comply with the preliminary injunction, testimony that was challenged by the government. See Maj. Op. at 952 (citing, e.g., J.A. 1661-68). The parties' eventual settlement of this dispute, see J.A. 1780 (Stipulation and Order), obviated any need for factual findings on this issue by the district court. Given that much of the testimony involved in-court demonstrations, see, e.g., J.A. 1661-72, I believe that it would be premature for this court to weigh in with its own resolution of this factual dispute

13. The district court's opinion does refer to one unit of analysis as "the software code that Microsoft itself now separately distributes at retail as 'Internet Explorer 3.0,' " *Microsoft*, 980 F.Supp. at 544, but the usefulness of this description was called into question in subsequent proceedings. See J.A. 1619 (assertion by Microsoft executive that it distributed no product at retail titled "Internet Explorer 3.0"); J.A. 1780 (agreement by DOJ and Microsoft that removal of only certain files would comply with preliminary injunction)

14. A word-processing program, for example, may contain a dictionary feature as well as update certain operating-system code once installed. The fact that other applications may call on the dictionary files, or that if the word-processing program were removed in its entirety, certain operating-system files would be "degraded," does not necessarily mean that the word-processing program is integrated with the operating system. It may be that only part of the program is so integrated, or it may be that none of it performs an operating-system function

15. In this respect, I note that this court has rejected the notion that the requirement that the government show a "substantial likelihood of success" means "to a certainty" or even "to 51 percent." See *Washington Metro. Area Transit Comm'n v. Holiday Tours, Inc.*, 559 F.2d 841, 844 (D.C.Cir.1977). Rather, because the district court is to assess the propriety of a preliminary injunction in light of the relative strengths of all four factors (likelihood of success on the merits, irreparable injury, harm to other parties, and furtherance of the public interest), "the necessary 'level' or 'degree' of possibility of success will vary according to the court's assessment of the other factors." *Id.* at 843