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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In re Application of)	WT Docket No. 96-41	
)		
LIBERTY CABLE CO., INC.	)	File Nos.:	
	)	708777	WNTT370
For Private Operational Fixed	)	708778, 713296	WNTM210
Microwave Service Authorization	)	708779	WNTM385
and Modifications	)	708780	WNTT555
	)	708781, 709426, 711937	WNTM212
New York, New York	)	709332	(NEW)
	)	712203	WNTW782
	)	712218	WNTY584
	)	712219	WNTY605
	)	713295	WNTX889
	)	713300	(NEW)
	)	717325	(NEW)

To: The Commission

MOTION FOR LEAVE TO FILE
SUPPLEMENTAL AUTHORITY

Bartholdi Cable Co., Inc., formerly known as Liberty Cable Co., Inc. ("Liberty"), by its attorneys and pursuant to Section 1.41 of the Commission's rules, hereby requests leave to file supplemental authority in support of its Petition for Reconsideration ("Petition"), filed January 11, 2001, and Reply to Oppositions to Petition for Reconsideration ("Reply"), filed February 12, 2001.

One of the principal bases for Liberty's Petition was that the FCC erred in "disavowing," rather than reversing, the ALJ's finding that Liberty exhibited a lack of candor by appealing the agency's finding on confidential treatment of an internal audit report. Petition at 3. Liberty asked the Commission to reverse the finding, and to remand the matter to the administrative law

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judge (“ALJ”) to reconsider all associated, tainted findings, including the findings that Liberty violated 47 U.S.C. § 301, 47 U.S.C § 1.17, and 47 C.F.R. § 1.65. Petition at 19-20.

As the attached letter from Constantine & Partners indicates, since Liberty filed its Petition and Reply, the United States Court of Appeals for the D.C. Circuit has handed down its decision in *United States v. Microsoft Corp.*,¹ which supports the proposition that when a reviewing court modifies the underlying bases of liability, the case should be remanded for a new evidentiary hearing on remedies at which the affected parties will be afforded an opportunity to be heard. *See* Exhibit 1. As the case bears directly on the issues presented by Liberty, the company moves that it be included in the record for the Commission’s consideration.

By affording Liberty an opportunity to include this new authority, the Commission will have a complete record to review. Moreover, the relief requested by Liberty will not prejudice other parties to this proceeding. Indeed, by considering this new precedent now, the agency may avoid the need for an appeal and, thereby, conserve the agency’s resources and advance the public interest.

¹ Nos. 98cv01232 and 98cv01233, June 28, 2001.

For the foregoing reasons, Liberty respectfully requests that the Commission supplement the record with the materials attached hereto as Exhibit 1.

Respectfully submitted,

WILEY, REIN & FIELDING

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July 24, 2001

EXHIBIT 1

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July 20, 2001

Federal Communications Commission
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Re: *In the Matter of Liberty Cable Company, WT Docket No. 96-41*

Dear Commissioners:

I am writing to alert the Commission to new authority that supports the Petition for Reconsideration filed by my client, Bartholdi Cable Company, Inc., formerly known as Liberty Cable Co., Inc. ("Liberty").

Liberty has filed a Petition for Reconsideration, dated January 11, 2001, which asks the Commission to reconsider its Decision¹ affirming, with modifications, the Initial Decision² of Administrative Law Judge Richard L. Sippel (the "ALJ") in denying Liberty certain OFS license applications, and further imposed a forfeiture of \$1,425,000. This Petition is currently pending before the Commission.

Liberty's Petition submits that reconsideration of the Commission's Decision is warranted, inter alia, because although the Commission disavows one of the ALJ's main bases for ruling against Liberty – an erroneous finding that Liberty exhibited a lack of candor by exercising its procedural right to appeal a ruling denying confidentiality to a document that Liberty reasonably believed was privileged – the Commission does not grant Liberty a new hearing on either the merits or even the appropriate penalty. Instead, the Commission affirmed the finding that Liberty lacked candor and actually imposed a new penalty on Liberty, a forfeiture of \$1,425,000.

Liberty's position that the Commission's partial rejection of the ALJ's findings warrants additional proceedings before the ALJ to reconsider Liberty's applications and the appropriateness of any penalty is strongly supported by the recent decision of the United States Court of Appeals for the District of Columbia Circuit in *United States v. Microsoft Corp.*, (Nos. 98cv01232 and 98cv01233, June 28, 2001). In that decision, the Court of Appeals vacates the

¹ *Liberty Cable Co. Inc.*, WT Docket No. 96-41, FCC 00-414 (rel. Dec. 13, 2000).

² *Liberty Cable Co. Inc.*, WT Docket No. 96-41, FCC 98D-1 (rel. March 6, 1998).

CONSTANTINE & PARTNERS

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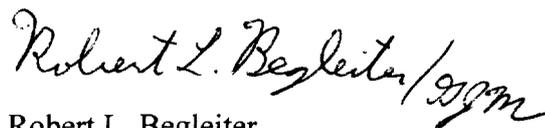
District Court's final judgment "in its entirety for the additional, independent reason that we have modified the underlying bases of liability." (*Slip Opinion* at 100.)

The Court of Appeals strongly makes the point that when a reviewing court modifies the underlying bases of liability, the case should be remanded for a new determination on remedies that affords the parties a proper opportunity to be heard on the appropriate remedy in light of the modified bases of liability. (*See Slip Opinion* at 100-103.) As the Court explains, regardless of whether a case involves money damages or equitable relief, there should be a significant "causal connection" between the conduct in question and the remedy. (*Slip Opinion* at 102.) Thus, when "findings of remediable violations do not withstand appellate scrutiny, it is necessary to vacate the remedy decree since the implicit findings of causal connection no longer exist to warrant our deferential affirmance." (*Slip Opinion* at 102.) In such a situation, the parties should be afforded "a proper opportunity to be heard" on the fashioning of an appropriate remedy in light of the altered conclusions on liability. (*Slip Opinion* at 102.)

These principles apply with equal force here, now that one of the main bases for the finding that Liberty lacked candor has been expressly disavowed by the Commission. Liberty should also be afforded an opportunity to be heard on the appropriate remedy in light of the modified findings regarding Liberty's candor. Since the Commission also imposed a new and significant penalty of a forfeiture of \$1,425,000 on Liberty despite the Commission's disavowal of one of the main bases for the ALJ's conclusions, there is an even greater necessity of affording Liberty an opportunity to be heard on the fashioning of an appropriate remedy in light of the altered conclusions on Liberty's candor. Liberty respectfully submits that the Commission should follow the above reasoning of the Court of Appeals by granting Liberty's Petition for Reconsideration.

We would be glad to further brief this issue if the Commission believes that any additional submissions would be helpful.

Respectfully submitted,


Robert L. Begleiter

Notice: This opinion is subject to formal revision before publication in the Federal Reporter or U.S.App.D.C. Reports. Users are requested to notify the Clerk of any formal errors in order that corrections may be made before the bound volumes go to press.

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued February 26 and 27, 2001

Decided June 28, 2001

No. 00-5212

UNITED STATES OF AMERICA,
APPELLEE

v.

MICROSOFT CORPORATION,
APPELLANT

Consolidated with
00-5213

Appeals from the United States District Court
for the District of Columbia
(No. 98cv01232)
(No. 98cv01233)

Richard J. Urowsky and *Steven L. Holley* argued the causes for appellant. With them on the briefs were *John L.*

Bills of costs must be filed within 14 days after entry of judgment. The court looks with disfavor upon motions to file bills of costs out of time.

Warden, Richard C. Pepperman, II, William H. Neukom, Thomas W. Burt, David A. Heiner, Jr., Charles F. Rule, Robert A. Long, Jr., and Carter G. Phillips. Christopher J. Meyers entered an appearance.

Lars H. Liebeler, Griffin B. Bell, Lloyd N. Cutler, Louis R. Cohen, C. Boyden Gray, William J. Kolasky, William F. Adkinson, Jr., Jeffrey D. Ayer, and Jay V. Prabhu were on the brief of *amici curiae* The Association for Competitive Technology and Computing Technology Industry Association in support of appellant.

David R. Burton was on the brief for *amicus curiae* Center for the Moral Defense of Capitalism in support of appellant.

Robert S. Getman was on the brief for *amicus curiae* Association for Objective Law in support of appellant.

Jeffrey P. Minear and David C. Frederick, Assistants to the Solicitor General, United States Department of Justice, and John G. Roberts, Jr., argued the causes for appellees. With them on the brief were A. Douglas Melamed, Acting Assistant Attorney General, United States Department of Justice, Jeffrey H. Blattner, Deputy Assistant Attorney General, Catherine G. O'Sullivan, Robert B. Nicholson, Adam D. Hirsh, Andrea Limmer, David Seidman, and Christopher Sprigman, Attorneys, Eliot Spitzer, Attorney General, State of New York, Richard L. Schwartz, Assistant Attorney General, and Kevin J. O'Connor, Office of the Attorney General, State of Wisconsin.

John Rogovin, Kenneth W. Starr, John F. Wood, Elizabeth Petrela, Robert H. Bork, Jason M. Mahler, Stephen M. Shapiro, Donald M. Falk, Mitchell S. Pettit, Kevin J. Arquit, and Michael C. Naughton were on the brief for *amici curiae* America Online, Inc., et al., in support of appellee. Paul T. Cappuccio entered an appearance.

Lee A. Hollaar, appearing *pro se*, was on the brief for *amicus curiae* Lee A. Hollaar.

Carl Lundgren, appearing *pro se*, was on the brief for *amicus curiae* Carl Lundgren.

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Before: EDWARDS, *Chief Judge*, WILLIAMS, GINSBURG, SENTELLE, RANDOLPH, ROGERS and TATEL, *Circuit Judges*.

Opinion for the Court filed *Per Curiam*.

Per Curiam: Microsoft Corporation appeals from judgments of the District Court finding the company in violation of §§ 1 and 2 of the Sherman Act and ordering various remedies.

The action against Microsoft arose pursuant to a complaint filed by the United States and separate complaints filed by individual States. The District Court determined that Microsoft had maintained a monopoly in the market for Intel-compatible PC operating systems in violation of § 2; attempted to gain a monopoly in the market for internet browsers in violation of § 2; and illegally tied two purportedly separate products, Windows and Internet Explorer (“IE”), in violation of § 1. *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30 (D.D.C. 2000) (“*Conclusions of Law*”). The District Court then found that the same facts that established liability under §§ 1 and 2 of the Sherman Act mandated findings of liability under analogous state law antitrust provisions. *Id.* To remedy the Sherman Act violations, the District Court issued a Final Judgment requiring Microsoft to submit a proposed plan of divestiture, with the company to be split into an operating systems business and an applications business. *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59, 64–65 (D.D.C. 2000) (“*Final Judgment*”). The District Court’s remedial order also contains a number of interim restrictions on Microsoft’s conduct. *Id.* at 66–69.

Microsoft’s appeal contests both the legal conclusions and the resulting remedial order. There are three principal aspects of this appeal. First, Microsoft challenges the District Court’s legal conclusions as to all three alleged antitrust violations and also a number of the procedural and factual foundations on which they rest. Second, Microsoft argues that the remedial order must be set aside, because the District Court failed to afford the company an evidentiary hearing on disputed facts and, also, because the substantive provisions of the order are flawed. Finally, Microsoft asserts that the trial judge committed ethical violations by engaging in impermissible *ex parte* contacts and making inappropriate

public comments on the merits of the case while it was pending. Microsoft argues that these ethical violations compromised the District Judge's appearance of impartiality, thereby necessitating his disqualification and vacatur of his Findings of Fact, Conclusions of Law, and Final Judgment.

After carefully considering the voluminous record on appeal—including the District Court's Findings of Fact and Conclusions of Law, the testimony and exhibits submitted at trial, the parties' briefs, and the oral arguments before this court—we find that some but not all of Microsoft's liability challenges have merit. Accordingly, we affirm in part and reverse in part the District Court's judgment that Microsoft violated § 2 of the Sherman Act by employing anticompetitive means to maintain a monopoly in the operating system market; we reverse the District Court's determination that Microsoft violated § 2 of the Sherman Act by illegally attempting to monopolize the internet browser market; and we remand the District Court's finding that Microsoft violated § 1 of the Sherman Act by unlawfully tying its browser to its operating system. Our judgment extends to the District Court's findings with respect to the state law counterparts of the plaintiffs' Sherman Act claims.

We also find merit in Microsoft's challenge to the Final Judgment embracing the District Court's remedial order. There are several reasons supporting this conclusion. First, the District Court's Final Judgment rests on a number of liability determinations that do not survive appellate review; therefore, the remedial order as currently fashioned cannot stand. Furthermore, we would vacate and remand the remedial order even were we to uphold the District Court's liability determinations in their entirety, because the District Court failed to hold an evidentiary hearing to address remedies-specific factual disputes.

Finally, we vacate the Final Judgment on remedies, because the trial judge engaged in impermissible *ex parte* contacts by holding secret interviews with members of the media and made numerous offensive comments about Microsoft officials in public statements outside of the courtroom, giving rise to an appearance of partiality. Although we find no evidence of actual bias, we hold that the actions of the trial

judge seriously tainted the proceedings before the District Court and called into question the integrity of the judicial process. We are therefore constrained to vacate the Final Judgment on remedies, remand the case for reconsideration of the remedial order, and require that the case be assigned to a different trial judge on remand. We believe that this disposition will be adequate to cure the cited improprieties.

In sum, for reasons more fully explained below, we affirm in part, reverse in part, and remand in part the District Court's judgment assessing liability. We vacate in full the Final Judgment embodying the remedial order and remand the case to a different trial judge for further proceedings consistent with this opinion.

I. INTRODUCTION

A. *Background*

In July 1994, officials at the Department of Justice ("DOJ"), on behalf of the United States, filed suit against Microsoft, charging the company with, among other things, unlawfully maintaining a monopoly in the operating system market through anticompetitive terms in its licensing and software developer agreements. The parties subsequently entered into a consent decree, thus avoiding a trial on the merits. See *United States v. Microsoft Corp.*, 56 F.3d 1448 (D.C. Cir. 1995) ("*Microsoft I*"). Three years later, the Justice Department filed a civil contempt action against Microsoft for allegedly violating one of the decree's provisions. On appeal from a grant of a preliminary injunction, this court held that Microsoft's technological bundling of IE 3.0 and 4.0 with Windows 95 did not violate the relevant provision of the consent decree. *United States v. Microsoft Corp.*, 147 F.3d 935 (D.C. Cir. 1998) ("*Microsoft II*"). We expressly reserved the question whether such bundling might independently violate §§ 1 or 2 of the Sherman Act. *Id.* at 950 n.14.

On May 18, 1998, shortly before issuance of the *Microsoft II* decision, the United States and a group of State plaintiffs

filed separate (and soon thereafter consolidated) complaints, asserting antitrust violations by Microsoft and seeking preliminary and permanent injunctions against the company's allegedly unlawful conduct. The complaints also sought any "other preliminary and permanent relief as is necessary and appropriate to restore competitive conditions in the markets affected by Microsoft's unlawful conduct." Gov't's Compl. at 53, *United States v. Microsoft Corp.*, No. 98-1232 (D.D.C. 1999). Relying almost exclusively on Microsoft's varied efforts to unseat Netscape Navigator as the preeminent internet browser, plaintiffs charged four distinct violations of the Sherman Act: (1) unlawful exclusive dealing arrangements in violation of § 1; (2) unlawful tying of IE to Windows 95 and Windows 98 in violation of § 1; (3) unlawful maintenance of a monopoly in the PC operating system market in violation of § 2; and (4) unlawful attempted monopolization of the internet browser market in violation of § 2. The States also brought pendent claims charging Microsoft with violations of various State antitrust laws.

The District Court scheduled the case on a "fast track." The hearing on the preliminary injunction and the trial on the merits were consolidated pursuant to FED. R. CIV. P. 65(a)(2). The trial was then scheduled to commence on September 8, 1998, less than four months after the complaints had been filed. In a series of pretrial orders, the District Court limited each side to a maximum of 12 trial witnesses plus two rebuttal witnesses. It required that all trial witnesses' direct testimony be submitted to the court in the form of written declarations. The District Court also made allowances for the use of deposition testimony at trial to prove subordinate or predicate issues. Following the grant of three brief continuances, the trial started on October 19, 1998.

After a 76-day bench trial, the District Court issued its Findings of Fact. *United States v. Microsoft Corp.*, 84 F. Supp. 2d 9 (D.D.C. 1999) ("*Findings of Fact*"). This triggered two independent courses of action. First, the District Court established a schedule for briefing on possible legal conclusions, inviting Professor Lawrence Lessig to participate as *amicus curiae*. Second, the District Court re-

ferred the case to mediation to afford the parties an opportunity to settle their differences. The Honorable Richard A. Posner, Chief Judge of the United States Court of Appeals for the Seventh Circuit, was appointed to serve as mediator. The parties concurred in the referral to mediation and in the choice of mediator.

Mediation failed after nearly four months of settlement talks between the parties. On April 3, 2000, with the parties' briefs having been submitted and considered, the District Court issued its conclusions of law. The District Court found Microsoft liable on the § 1 tying and § 2 monopoly maintenance and attempted monopolization claims, *Conclusions of Law*, at 35–51, while ruling that there was insufficient evidence to support a § 1 exclusive dealing violation, *id.* at 51–54. As to the pendent State actions, the District Court found the State antitrust laws conterminous with §§ 1 and 2 of the Sherman Act, thereby obviating the need for further State-specific analysis. *Id.* at 54–56. In those few cases where a State's law required an additional showing of *intrastate* impact on competition, the District Court found the requirement easily satisfied on the evidence at hand. *Id.* at 55.

Having found Microsoft liable on all but one count, the District Court then asked plaintiffs to submit a proposed remedy. Plaintiffs' proposal for a remedial order was subsequently filed within four weeks, along with six supplemental declarations and over 50 new exhibits. In their proposal, plaintiffs sought specific conduct remedies, plus structural relief that would split Microsoft into an applications company and an operating systems company. The District Court rejected Microsoft's request for further evidentiary proceedings and, following a single hearing on the merits of the remedy question, issued its Final Judgment on June 7, 2000. The District Court adopted plaintiffs' proposed remedy without substantive change.

Microsoft filed a notice of appeal within a week after the District Court issued its Final Judgment. This court then ordered that any proceedings before it be heard by the court sitting *en banc*. Before any substantive matters were ad-

dressed by this court, however, the District Court certified appeal of the case brought by the United States directly to the Supreme Court pursuant to 15 U.S.C. § 29(b), while staying the final judgment order in the federal and state cases pending appeal. The States thereafter petitioned the Supreme Court for a *writ of certiorari* in their case. The Supreme Court declined to hear the appeal of the Government's case and remanded the matter to this court; the Court likewise denied the States' petition for *writ of certiorari*. *Microsoft Corp. v. United States*, 530 U.S. 1301 (2000). This consolidated appeal followed.

B. Overview

Before turning to the merits of Microsoft's various arguments, we pause to reflect briefly on two matters of note, one practical and one theoretical.

The practical matter relates to the temporal dimension of this case. The litigation timeline in this case is hardly problematic. Indeed, it is noteworthy that a case of this magnitude and complexity has proceeded from the filing of complaints through trial to appellate decision in a mere three years. See, e.g., *Data Gen. Corp. v. Grumman Sys. Support Corp.*, 36 F.3d 1147, 1155 (1st Cir. 1994) (six years from filing of complaint to appellate decision); *Transamerica Computer Co., Inc. v. IBM*, 698 F.2d 1377, 1381 (9th Cir. 1983) (over four years from start of trial to appellate decision); *United States v. United Shoe Mach. Corp.*, 110 F. Supp. 295, 298 (D. Mass. 1953) (over five years from filing of complaint to trial court decision).

What is somewhat problematic, however, is that just over six years have passed since Microsoft engaged in the first conduct plaintiffs allege to be anticompetitive. As the record in this case indicates, six years seems like an eternity in the computer industry. By the time a court can assess liability, firms, products, and the marketplace are likely to have changed dramatically. This, in turn, threatens enormous practical difficulties for courts considering the appropriate measure of relief in equitable enforcement actions, both in crafting injunctive remedies in the first instance and review-

ing those remedies in the second. Conduct remedies may be unavailing in such cases, because innovation to a large degree has already rendered the anticompetitive conduct obsolete (although by no means harmless). And broader structural remedies present their own set of problems, including how a court goes about *restoring* competition to a dramatically changed, and constantly changing, marketplace. That is just one reason why we find the District Court's refusal in the present case to hold an evidentiary hearing on remedies—to update and flesh out the available information before seriously entertaining the possibility of dramatic structural relief—so problematic. *See infra* Section V.

We do not mean to say that enforcement actions will no longer play an important role in curbing infringements of the antitrust laws in technologically dynamic markets, nor do we assume this in assessing the merits of this case. Even in those cases where forward-looking remedies appear limited, the Government will continue to have an interest in defining the contours of the antitrust laws so that law-abiding firms will have a clear sense of what is permissible and what is not. And the threat of private damage actions will remain to deter those firms inclined to test the limits of the law.

The second matter of note is more theoretical in nature. We decide this case against a backdrop of significant debate amongst academics and practitioners over the extent to which “old economy” § 2 monopolization doctrines should apply to firms competing in dynamic technological markets characterized by network effects. In markets characterized by network effects, one product or standard tends towards dominance, because “the utility that a user derives from consumption of the good increases with the number of other agents consuming the good.” Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 424 (1985). For example, “[a]n individual consumer's demand to use (and hence her benefit from) the telephone network . . . increases with the number of other users on the network whom she can call or from whom she can receive calls.” Howard A. Shelanski & J. Gregory Sidak, *Antitrust Divestiture in Network Industries*,

68 U. CHI. L. REV. 1, 8 (2001). Once a product or standard achieves wide acceptance, it becomes more or less entrenched. Competition in such industries is “for the field” rather than “within the field.” See Harold Demsetz, *Why Regulate Utilities?*, 11 J.L. & ECON. 55, 57 & n.7 (1968) (emphasis omitted).

In technologically dynamic markets, however, such entrenchment may be temporary, because innovation may alter the field altogether. See JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 81–90 (Harper Perennial 1976) (1942). Rapid technological change leads to markets in which “firms compete through innovation for temporary market dominance, from which they may be displaced by the next wave of product advancements.” Shelanski & Sidak, at 11–12 (discussing Schumpeterian competition, which proceeds “sequentially over time rather than simultaneously across a market”). Microsoft argues that the operating system market is just such a market.

Whether or not Microsoft’s characterization of the operating system market is correct does not appreciably alter our mission in assessing the alleged antitrust violations in the present case. As an initial matter, we note that there is no consensus among commentators on the question of whether, and to what extent, current monopolization doctrine should be amended to account for competition in technologically dynamic markets characterized by network effects. Compare Steven C. Salop & R. Craig Romaine, *Preserving Monopoly: Economic Analysis, Legal Standards, and Microsoft*, 7 GEO. MASON L. REV. 617, 654–55, 663–64 (1999) (arguing that exclusionary conduct in high-tech networked industries deserves heightened antitrust scrutiny in part because it may threaten to deter innovation), with Ronald A. Cass & Keith N. Hylton, *Preserving Competition: Economic Analysis, Legal Standards and Microsoft*, 8 GEO. MASON L. REV. 1, 36–39 (1999) (equivocating on the antitrust implications of network effects and noting that the presence of network externalities may actually encourage innovation by guaranteeing more durable monopolies to innovating winners). Indeed, there is some suggestion that the economic consequences of network

effects and technological dynamism act to offset one another, thereby making it difficult to formulate categorical antitrust rules absent a particularized analysis of a given market. *See Shelanski & Sidak*, at 6–7 (“High profit margins might appear to be the benign and necessary recovery of legitimate investment returns in a Schumpeterian framework, but they might represent exploitation of customer lock-in and monopoly power when viewed through the lens of network economics. . . . The issue is particularly complex because, in network industries characterized by rapid innovation, both forces may be operating and can be difficult to isolate.”).

Moreover, it should be clear that Microsoft makes no claim that anticompetitive conduct should be assessed differently in technologically dynamic markets. It claims only that the measure of monopoly power should be different. For reasons fully discussed below, we reject Microsoft’s monopoly power argument. *See infra* Section II.A.

With this backdrop in mind, we turn to the specific challenges raised in Microsoft’s appeal.

II. MONOPOLIZATION

Section 2 of the Sherman Act makes it unlawful for a firm to “monopolize.” 15 U.S.C. § 2. The offense of monopolization has two elements: “(1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.” *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966). The District Court applied this test and found that Microsoft possesses monopoly power in the market for Intel-compatible PC operating systems. Focusing primarily on Microsoft’s efforts to suppress Netscape Navigator’s threat to its operating system monopoly, the court also found that Microsoft maintained its power not through competition on the merits, but through unlawful means. Microsoft challenges both conclusions. We defer to the District Court’s findings of fact, setting them aside only if clearly erroneous. FED. R. CIV. P. 52(a). We review legal

questions *de novo*. *United States ex rel. Modern Elec., Inc. v. Ideal Elec. Sec. Co.*, 81 F.3d 240, 244 (D.C. Cir. 1996).

We begin by considering whether Microsoft possesses monopoly power, *see infra* Section II.A, and finding that it does, we turn to the question whether it maintained this power through anticompetitive means. Agreeing with the District Court that the company behaved anticompetitively, *see infra* Section II.B, and that these actions contributed to the maintenance of its monopoly power, *see infra* Section II.C, we affirm the court's finding of liability for monopolization.

A. Monopoly Power

While merely possessing monopoly power is not itself an antitrust violation, *see Northeastern Tel. Co. v. AT & T*, 651 F.2d 76, 84–85 (2d Cir. 1981), it is a necessary element of a monopolization charge, *see Grinnell*, 384 U.S. at 570. The Supreme Court defines monopoly power as “the power to control prices or exclude competition.” *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956). More precisely, a firm is a monopolist if it can profitably raise prices substantially above the competitive level. 2A PHILLIP E. AREEDA ET AL., ANTITRUST LAW ¶501, at 85 (1995); *cf. Ball Mem'l Hosp., Inc. v. Mut. Hosp. Ins., Inc.*, 784 F.2d 1325, 1335 (7th Cir. 1986) (defining market power as “the ability to cut back the market's total output and so raise price”). Where evidence indicates that a firm has in fact profitably done so, the existence of monopoly power is clear. *See Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995); *see also FTC v. Indiana Fed'n of Dentists*, 476 U.S. 447, 460–61 (1986) (using direct proof to show market power in Sherman Act § 1 unreasonable restraint of trade action). Because such direct proof is only rarely available, courts more typically examine market structure in search of circumstantial evidence of monopoly power. 2A AREEDA ET AL., ANTITRUST LAW ¶ 531a, at 156; *see also, e.g., Grinnell*, 384 U.S. at 571. Under this structural approach, monopoly power may be inferred from a firm's possession of a dominant share of a relevant market that is protected by entry barriers. *See*

Rebel Oil, 51 F.3d at 1434. “Entry barriers” are factors (such as certain regulatory requirements) that prevent new rivals from timely responding to an increase in price above the competitive level. See *S. Pac. Communications Co. v. AT & T*, 740 F.2d 980, 1001–02 (D.C. Cir. 1984).

The District Court considered these structural factors and concluded that Microsoft possesses monopoly power in a relevant market. Defining the market as Intel-compatible PC operating systems, the District Court found that Microsoft has a greater than 95% share. It also found the company’s market position protected by a substantial entry barrier. *Conclusions of Law*, at 36.

Microsoft argues that the District Court incorrectly defined the relevant market. It also claims that there is no barrier to entry in that market. Alternatively, Microsoft argues that because the software industry is uniquely dynamic, direct proof, rather than circumstantial evidence, more appropriately indicates whether it possesses monopoly power. Rejecting each argument, we uphold the District Court’s finding of monopoly power in its entirety.

1. Market Structure

a. Market definition

“Because the ability of consumers to turn to other suppliers restrains a firm from raising prices above the competitive level,” *Rothery Storage & Van Co. v. Atlas Van Lines, Inc.*, 792 F.2d 210, 218 (D.C. Cir. 1986), the relevant market must include all products “reasonably interchangeable by consumers for the same purposes.” *du Pont*, 351 U.S. at 395. In this case, the District Court defined the market as “the licensing of all Intel-compatible PC operating systems worldwide,” finding that there are “currently no products—and . . . there are not likely to be any in the near future—that a significant percentage of computer users worldwide could substitute for [these operating systems] without incurring substantial costs.” *Conclusions of Law*, at 36. Calling this market definition “far too narrow,” Appellant’s Opening Br. at 84, Microsoft argues that the District Court improperly

excluded three types of products: non-Intel compatible operating systems (primarily Apple's Macintosh operating system, Mac OS), operating systems for non-PC devices (such as handheld computers and portal websites), and "middleware" products, which are not operating systems at all.

We begin with Mac OS. Microsoft's argument that Mac OS should have been included in the relevant market suffers from a flaw that infects many of the company's monopoly power claims: the company fails to challenge the District Court's factual findings, or to argue that these findings do not support the court's conclusions. The District Court found that consumers would not switch from Windows to Mac OS in response to a substantial price increase because of the costs of acquiring the new hardware needed to run Mac OS (an Apple computer and peripherals) and compatible software applications, as well as because of the effort involved in learning the new system and transferring files to its format. *Findings of Fact* ¶ 20. The court also found the Apple system less appealing to consumers because it costs considerably more and supports fewer applications. *Id.* ¶ 21. Microsoft responds only by saying: "the district court's market definition is so narrow that it excludes Apple's Mac OS, which has competed with Windows for years, simply because the Mac OS runs on a different microprocessor." Appellant's Opening Br. at 84. This general, conclusory statement falls far short of what is required to challenge findings as clearly erroneous. *Pendleton v. Rumsfeld*, 628 F.2d 102, 106 (D.C. Cir. 1980); see also *Terry v. Reno*, 101 F.3d 1412, 1415 (D.C. Cir. 1996) (holding that claims made but not argued in a brief are waived). Microsoft neither points to evidence contradicting the District Court's findings nor alleges that supporting record evidence is insufficient. And since Microsoft does not argue that even if we accept these findings, they do not support the District Court's conclusion, we have no basis for upsetting the court's decision to exclude Mac OS from the relevant market.

Microsoft's challenge to the District Court's exclusion of non-PC based competitors, such as information appliances (handheld devices, etc.) and portal websites that host server-based software applications, suffers from the same defect:

the company fails to challenge the District Court's key factual findings. In particular, the District Court found that because information appliances fall far short of performing all of the functions of a PC, most consumers will buy them only as a supplement to their PCs. *Findings of Fact* ¶ 23. The District Court also found that portal websites do not presently host enough applications to induce consumers to switch, nor are they likely to do so in the near future. *Id.* ¶ 27. Again, because Microsoft does not argue that the District Court's findings do not support its conclusion that information appliances and portal websites are outside the relevant market, we adhere to that conclusion.

This brings us to Microsoft's main challenge to the District Court's market definition: the exclusion of middleware. Because of the importance of middleware to this case, we pause to explain what it is and how it relates to the issue before us.

Operating systems perform many functions, including allocating computer memory and controlling peripherals such as printers and keyboards. See Direct Testimony of Frederick Warren-Boulton ¶ 20, reprinted in 5 J.A. at 3172-73. Operating systems also function as platforms for software applications. They do this by "exposing"—*i.e.*, making available to software developers—routines or protocols that perform certain widely-used functions. These are known as Application Programming Interfaces, or "APIs." See Direct Testimony of James Barksdale ¶ 70, reprinted in 5 J.A. at 2895-96. For example, Windows contains an API that enables users to draw a box on the screen. See Direct Testimony of Michael T. Devlin ¶ 12, reprinted in 5 J.A. at 3525. Software developers wishing to include that function in an application need not duplicate it in their own code. Instead, they can "call"—*i.e.*, use—the Windows API. See Direct Testimony of James Barksdale ¶¶ 70-71, reprinted in 5 J.A. at 2895-97. Windows contains thousands of APIs, controlling everything from data storage to font display. See Direct Testimony of Michael Devlin ¶ 12, reprinted in 5 J.A. at 3525.

Every operating system has different APIs. Accordingly, a developer who writes an application for one operating

system and wishes to sell the application to users of another must modify, or “port,” the application to the second operating system. *Findings of Fact* ¶ 4. This process is both time-consuming and expensive. *Id.* ¶ 30.

“Middleware” refers to software products that expose their own APIs. *Id.* ¶ 28; Direct Testimony of Paul Maritz ¶¶ 234–36, *reprinted in* 6 J.A. at 3727–29. Because of this, a middleware product written for Windows could take over some or all of Windows’s valuable platform functions—that is, developers might begin to rely upon APIs exposed by the middleware for basic routines rather than relying upon the API set included in Windows. If middleware were written for multiple operating systems, its impact could be even greater. The more developers could rely upon APIs exposed by such middleware, the less expensive porting to different operating systems would be. Ultimately, if developers could write applications relying exclusively on APIs exposed by middleware, their applications would run on any operating system on which the middleware was also present. *See* Direct Testimony of Avadis Tevanian, Jr. ¶ 45, *reprinted in* 5 J.A. at 3113. Netscape Navigator and Java—both at issue in this case—are middleware products written for multiple operating systems. *Findings of Fact* ¶ 28.

Microsoft argues that, because middleware could usurp the operating system’s platform function and might eventually take over other operating system functions (for instance, by controlling peripherals), the District Court erred in excluding Navigator and Java from the relevant market. The District Court found, however, that neither Navigator, Java, nor any other middleware product could now, or would soon, expose enough APIs to serve as a platform for popular applications, much less take over all operating system functions. *Id.* ¶¶ 28–29. Again, Microsoft fails to challenge these findings, instead simply asserting middleware’s “potential” as a competitor. Appellant’s Opening Br. at 86. The test of reasonable interchangeability, however, required the District Court to consider only substitutes that constrain pricing in the reasonably foreseeable future, and only products that can enter the market in a relatively short time can perform this function. *See Rothery*, 792 F.2d at 218 (“Because the ability

of consumers to turn to other suppliers restrains a firm from raising prices above the competitive level, the definition of the ‘relevant market’ rests on a determination of available substitutes.”); *see also Findings of Fact* ¶ 29 (“[I]t would take several years for middleware . . . to evolve” into a product that can constrain operating system pricing.). Whatever middleware’s ultimate potential, the District Court found that consumers could not now abandon their operating systems and switch to middleware in response to a sustained price for Windows above the competitive level. *Findings of Fact* ¶¶ 28, 29. Nor is middleware likely to overtake the operating system as the primary platform for software development any time in the near future. *Id.*

Alternatively, Microsoft argues that the District Court should not have excluded middleware from the relevant market because the primary focus of the plaintiffs’ § 2 charge is on Microsoft’s attempts to suppress middleware’s threat to its operating system monopoly. According to Microsoft, it is “contradict[ory],” 2/26/2001 Ct. Appeals Tr. at 20, to define the relevant market to exclude the “very competitive threats that gave rise” to the action. Appellant’s Opening Br. at 84. The purported contradiction lies between plaintiffs’ § 2 theory, under which Microsoft preserved its monopoly against middleware technologies that threatened to become viable substitutes for Windows, and its theory of the relevant market, under which middleware is not presently a viable substitute for Windows. Because middleware’s threat is only nascent, however, no contradiction exists. Nothing in § 2 of the Sherman Act limits its prohibition to actions taken against threats that are already well-developed enough to serve as present substitutes. *See infra* Section II.C. Because market definition is meant to identify products “reasonably interchangeable by consumers,” *du Pont*, 351 U.S. at 395, and because middleware is not now interchangeable with Windows, the District Court had good reason for excluding middleware from the relevant market.

b. *Market power*

Having thus properly defined the relevant market, the District Court found that Windows accounts for a greater than 95% share. *Findings of Fact* ¶ 35. The court also