

A. Microsoft's monopoly power is established by direct evidence of its existence and exercise

15. That Microsoft has monopoly power in operating systems is directly evidenced by the “sustained absence of realistic commercial alternatives” to Microsoft’s operating system product.

i. Fisher, 6/1/99am, at 11:17-18.

15.1. Microsoft’s principal customers, computer manufacturers (OEMs), lack any commercially viable alternative to Windows.

15.1.1. OEMs are the most important direct customers of operating systems.

Because competition among OEMs is intense, they respond to consumer demand. OEMs thus not only are important customers in their own right, but also are surrogates for determining the commercial alternatives reasonably available to consumers.

- i. Dr. Warren-Boulton testified that the “great majority of operating systems installed on PCs are installed on new machines by OEMs.” Warren-Boulton Dir. ¶ 23; id. at ¶ 23 n.7 (noting that in 1997, 87.6% of all copies of Windows 95 were installed by OEMs).
- ii. Professor Fisher testified: “OEMs’s are, in some sense, the representative of the consumer for certain purposes. They are in competition with each other. They gain if they deliver what end users actually want. They wouldn’t care about the restrictions on them if they don’t think that it mattered in their dealings with consumers.” Fisher, 6/2/99am, at 22:1-6.
- iii. Dean Schmalensee conceded that “OEMs respond to consumer demand.” Schmalensee, 1/25/99am, at 15:16 (sealed session).
- iv. See also Rose Dir. ¶ 17 (“If there were sufficient customer demand for a different operating systems for personal computers, Compaq would consider licensing that operating system.”); Von Holle Dep., 1/13/99, at 299:15 - 300:1 (“if viable alternative emerged” to Windows, Gateway “would evaluate” them because Gateway likes “to make sure

that” its “customers are offered a . . . choice of products that become popular in the market place”); Ransom Dep. (played 12/16/98pm), at 71:20 - 72:4 (“If there’s a product with a competitive advantage or a price advantage, frankly, we would consider it. But it has not been presented to us.”).

15.1.2. OEMs uniformly testify that they lack any commercially viable

alternative to Windows:

- i. The testimony of Garry Norris, former Director of Strategy and Software at IBM Personal Computer Company, vividly illustrates the absence of commercially viable alternatives to Windows. Norris testified that, “without Windows 95, you couldn’t be in the P.C. business.” Norris, 6/7/99am, at 66:18-20. Indeed, Norris explained, IBM concluded in the summer of 1995 that, if it did not obtain a Windows 95 license, it would “lose . . . anywhere from 30 to 90 percent” of its sales volume, and “the IBM P.C. company would be out of business” in “three to twelve months.” Norris, 6/7/99am, at 65:16 - 67:18.
- ii. The testimony of Microsoft’s own OEM witness, Compaq’s John Rose, illustrates OEMs’ dependence on Windows. Compaq preinstalls Microsoft operating systems on over 90% of its PCs, including 100% of its popular Presario line, Rose, 2/17/99pm, at 12:25 - 15:3; Rose Dir. ¶ 17 (since 1993, Compaq has “not consistently loaded any alternatives to Windows on personal computers it markets to consumers.”), because Compaq has no commercially viable alternative to Windows. Rose, 2/17/99pm, at 8:16-20.
- iii. Gateway’s Penny Nash testified that for Gateway to stop licensing Microsoft operating systems would “be suicide.” Fisher Dir. ¶ 63 (quoting Nash Dep. 11/18/97, at 5-6); see also Von Holle Dep., 1/13/99, at 298:2-23, GX 357 (sealed); Fisher Dir. ¶ 63 (quoting Brown Dep., 3/5/98, at 10-11).
- iv. Other OEMs gave similar testimony: Mal Ransom of Packard Bell, a leading OEM, testified that Packard Bell pre-installs Windows on 100% of its PCs and has done so for several years. Ransom Dep. (played 12/16/98pm), at 68:14 - 69:23. Packard Bell loads Windows because it is “the only viable choice.” Ransom Dep. (played

12/16/98pm), at 69:5. Frank Santos testified that Hewlett-Packard has not considered any other operating system for its consumer line of PCs “because there isn’t any out there.” Fisher Dir. ¶ 63 (quoting Santos Dep., 4/13/98, at 7-8).

15.1.3. All three economic experts in this case agreed that there is no commercially viable alternative to Windows to which a significant OEM can switch in response to a substantial price increase or its equivalent by Microsoft.

- i. Professor Fisher testified that Microsoft’s power is shown by evidence that “Microsoft’s customers do not believe that they have serious commercial alternatives to Windows.” Fisher, 6/1/99am, at 11:9-19; see also Fisher Dir. ¶ 63.
- ii. Dean Schmalensee conceded that there are no reasonable substitutes for Windows to which a major OEM can switch and that Microsoft can raise the short-term price of Windows. Schmalensee, 1/20/99am, at 33:3-8; see also 1/13/99pm, at 68:17 - 69:2.
- iii. Dr. Warren-Boulton testified that OEMs consider Windows “commercially necessary” and that “if confronted with a 10% increase in their Windows license, they would not switch to operating system products for other hardware platforms.” Warren-Boulton Dir. ¶ 39 (summarizing OEM testimony); Warren-Boulton, 11/23/98pm, at 70:9-12 (testifying that it is “commercially necessary to be able to offer Microsoft operating system . . . to end users”).

15.1.4. Microsoft knows that OEMs have no choice but to load Windows.

15.1.4.1. Microsoft told OEMs that they lack any alternative to Windows and, indeed, that Microsoft was “the only game in town.”

- i. Norris of IBM testified that Microsoft executives repeatedly sought to use the fact that IBM had no “commercially viable alternative” to Windows (Norris, 6/7/99am, at 66:18-20), and feared losing access to Windows, to pressure IBM into dropping products that competed with Microsoft. See infra Part V.C.2.b.(3)(b); ¶¶ 209-212. Indeed, Norris testified, the

Microsoft executive in charge of its relationship with the IBM PC company bluntly told IBM during negotiations, “where else are you going to go? This is the only game in town.” Norris, 6/7/99am, at 66:21 - 67:6.

15.1.4.2. OEMs told Microsoft that they lack any viable alternative to Windows.

- i. John Romano of Hewlett Packard wrote to Microsoft, when it imposed costly screen restrictions upon Hewlett Packard, that “if we had another supplier, I guarantee you would not be our supplier of choice.” GX 309.
- ii. Gateway urged Microsoft

GX 357 (sealed).

15.1.4.3. Other operating system vendors recognize that they do not provide a viable alternative to Windows.

- i. John Soyring of IBM testified: “As a result of the applications and device support for Windows, in my view, suppliers of PCs have no commercially viable choice but to license Windows and to offering on the vast majority of PCs they ship.” Soyring Dir. ¶ 11.
- ii. Avadis Tevanian of Apple computer testified: “For the foreseeable future, Microsoft will maintain a market share in excess of 90 percent of the desktop operating system market, a dominance that will enable it to continue to effectively control both price and technologies.” Tevanian Dir. ¶ 14.
- iii. The CEO of Red Hat Linux also insists that Red Hat is not a viable competitor to Microsoft. In a Washington Post article he said: “It just tells you how desperate Microsoft is for a competitor that they’re holding up a software box produced by 100 guys in the hills of North Carolina.” He also said: “We are absolutely not a viable competitor at this time. We have

every intention of being one. But how long will it take? Realistically, it will be twenty years.” GX 1568.

15.1.5. Microsoft set the Windows royalty recognizing that OEMs have no viable alternative to Windows.

- i. Joachim Kempin, Microsoft’s Vice President for OEM sales, testified that the prices set by other operating system vendors were not a consideration in setting the Windows 98 royalty. Kempin, 2/25/99pm, at 97:24 - 98:23. To the contrary, Microsoft set the royalty for Windows 98 by “compar[ing] it with Windows 95.” Id. at 98:6 (quoting Kempin’s deposition, 21:20 - 22:6); see also Kempin, 2/25/99pm, at 98:15-23 (quoting Kempin’s deposition, 22:10-22:6) (Kempin also did not consider “competition more generally”).
- ii. Kempin testified that he did not consider the prices set by other operating system vendors because, “with Windows 95 or 98, when it comes to value propositions, it just doesn’t come close to anything else. Meaning I believe competitors are basically selling inferior-type products.” Competitors products are “inferior,” Kempin explained, because “the number of applications, peripheral devices, support on that platform, basically, is so huge that the benefits of buying into that platform is huge.” Kempin, 2/25/99pm, at 98:24 - 99:5 (quoting Kempin’s deposition, 22:19-24).
- iii. Kempin, in contemplating “OEM pricing thoughts,” wrote that although conceivably, “[o]ur high prices could get a single OEM . . . or a coalition to fund a competing effort,” he considers it “doubtful.” He concluded: “Could they convince customer to change their computing platform is the real questions. [sic]. The existing investments in training, infrastructure and applications in windows computing are huge and will create a lot of inertia.” GX 365.

15.1.5A. Microsoft's argument that the price it can charge for Windows

is constrained by “existing vendors of operating systems,” including OS/2, BeOS, Solaris, Linux, and Macintosh (MPF ¶¶ 91, 126-133), is inconsistent with the evidence.

- i. See supra Part II.A; ¶ 15.
- ii. Dean Schmalensee conceded that Microsoft’s current operating system competitors, including Apple, are not “the primary constraint on Microsoft’s pricing.” Schmalensee, 1/14/99am, at 24:16-25.

15.1.5A.1. Linux does not constrain the price Microsoft charges for Windows.

- i. Dean Schmalensee conceded that Linux is not a significant constraint on Microsoft’s ability to exercise market power, that he cannot predict when it will be such a constraint, and that he does not “pretend to be able to forecast” whether there will be substantial demand for Linux in the future. Schmalensee, 1/13/99pm, at 52:25 - 53:8; Schmalensee, 1/14/99am, at 23:16-25; Schmalensee, 6/23/99pm, at 73:7-12.
- ii. Linux is primarily used as a server operating system, a fact which Dean Schmalensee did not even know at the time of his original testimony. Schmalensee, 1/13/99pm, at 73:18-19. In support of its argument that Linux is a “substantial threat” to Microsoft in the desktop operating system market (MPF ¶ 133), Microsoft cites a long list of trade press articles outlining recent development efforts aimed at popularizing Linux. (MPF ¶ 132). But many of these articles simply describe interest by OEMs, ISVs, and redistributors in Linux for server, not desktop, uses. See, e.g., DX 2407 (HP plans to preinstall Linux on servers); DX 2409 (similar); DX 2338 (similar); DX 2249 (Oracle and Netscape plan server application software for Linux); DX 1846 (similar); DX 2250 (Netscape’s Andreessen sees Linux as important server operating system “alongside NT, Solaris, and HP-UX”); DX 51 (Linux server usage by ISPs); DX 194

(Caldera providing server applications); DX 1871 (similar); DX 2411 (Red Hat attracting investors); DX 2402 (includes comment by the CEO of Corel that “Linux has not really happened in a big way” on the desktop).

- iii. Microsoft states that “leading OEMs, such as Sun, Dell, Gateway, Toshiba, IBM, Silicon Graphics, Hewlett-Packard and Hitachi,” are shipping or planning to ship Linux “on one or more of their computer models” (MPF ¶ 131) -- leaving unstated that several of these OEMs (e.g., HP) plan to ship Linux only on servers and that others (for example, Silicon Graphics and Sun) sell only workstation and server systems. DX 2338; see also infra ¶¶ 19.2, Part II.D.2.a; 42.3.2.
- iv. While Microsoft claims that Linux is a “substantial threat” to Windows and cites a single interview in which Linus Torvalds said that Windows 98 is a “target” on which he has become “much more focused” (MPF ¶ 133), it flatly ignores other evidence, such as the January 1999 statement by the CEO of Red Hat, a leading Linux vendor, stated in January, 1999: “We are absolutely not a viable competitor” to Windows “at this time. We have every intention of being one, but how long will that take? Realistically, it will be 20 years.” GX 1568; see also infra Part II.D.2.a; ¶¶ 42.3.2 - 42.3.5, 42.4.

15.1.5A.2. Be Inc.’s BeOS does not constrain the price

Microsoft charges for Windows.

- i. BeOS, which is designed to support high-end graphics work, is marketed as a complement to Windows, not a substitute for it. GX 568. BeOS is loaded by OEMs not instead of Windows, but alongside it, so that users can switch between them. See infra Part II.D.2.a; ¶¶ 42.3, 42.4.

15.1.5A.3. IBM’s OS/2 does not constrain the price Microsoft

charges for Windows.

- i. Microsoft concedes that IBM's OS/2 has "underlying shortcomings" (MPF ¶ 205), lacks the features and functionality that consumers want (MPF ¶ 206), and is no longer sold even by the IBM PC Company in the United States because of "insufficient demand" (MPF ¶ 202).
- ii. IBM stopped trying to convince ISVs to write to OS/2 in 1996 because it concluded that the applications barrier to entry in competing against Windows for consumer attention was too high. See infra Part II.B. ¶ 30-30.3.

15.1.5A.4. Sun's Solaris does not constrain the price Microsoft charges for Windows.

- i. Solaris is a server and workstation operating system. Sun's Brian Croll testified that Solaris does not compete with Windows. Croll Dep. (played 12/15/98pm), at 56:23 - 57:13. Intel-compatible server operating systems like Solaris do not compete with Windows 9x because they are aimed at business and technical users, lack the kinds of applications desktop users demand, and are prohibitively more expensive. See infra Part II.B; ¶ 19.2.

15.1.5A.5. Apple's Macintosh operating system does not constrain the price Microsoft charges for Windows.

- i. OEMs that make Intel-compatible PCs or users that own or desire to purchase Intel - compatible PCs could not substitute the Macintosh operating system for Windows because the Macintosh does not run on Intel-compatible PCs. See supra Part I; ¶ 12.
- ii. Purchasers of computer systems would not switch from buying an Intel-compatible system with Windows to buying a non-Intel-compatible system with Macintosh, in response to an increase in the price of Windows. See infra Part II.B.; ¶ 19.3.3.2. Because Windows accounts for only a small percentage of the price of a new computer system, even a substantial increase in the price

of Windows would result in only a trivial increase percentage in the price of the entire system. See infra Part II.B. ¶ 19.3.1. Purchasers therefore would not incur the substantial costs of switching system types in response to even a large increase in the price of Windows. See infra Part II.B; ¶19.3.2.

15.1.6. OEMs do not believe alternatives to Windows are likely to emerge in the next several years such that Microsoft is constrained from being able to raise price or reduce quality today.

- i. Garry Norris testified that without a Windows 95 license, “the IBM P.C. company would be out of business” in “three to twelve months.” Norris, 6/7/99am, at 65:16 - 67:18.
- ii. Professor Fisher testified that there is no reason to “believe that OEMs would substitute other operating systems for Microsoft’s Windows operating system in favor of anything that can now be seen on the horizon”; that is, in “the next few years.” Fisher, 1/6/99am, at 69:23 - 70:1.

15.2. Both OEMs and applications developers (ISVs) recognize that they are dependent on Microsoft and fear that Microsoft will use its monopoly power to harm them if they favor Microsoft’s rivals.

- i. When Microsoft released a Java development kit that reflected Microsoft’s “breaking away from pure Java,” Paul White of Symantec, an ISV, wrote that “it’s better to say nothing than risk the blast from MS.” GX 2078.
- ii. Barry Schuler of AOL testified that, because its applications must run on Windows, “there’s an absolute dependency on what the future direction of that operating system.” DX 2810.
- iii. William Harris testified: “Intuit’s dependence on the Windows operating system creates additional dependence on the supplier of the operating system, Microsoft. We depend on Microsoft for the information, specifications, training, development assistance and development tools necessary to develop

our products in an effective and timely manner.” Harris Dir. ¶ 28.

- iv. Hewlett Packard’s John Romano testified that

DX 2582A (sealed).

- v. A Compaq presentation entitled “Microsoft Meeting Preparation — Portable and Software Marketing PC Division” dated January 13, 1993, states:

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presentation continued: “Judgment: How retaliatory would they get?” and lists the possibilities as follows: “Pricing advantage — Revenue from updates — Access to early SDKs — Field sales activities (Microsoft has ~900 field sales people) — Support and training — Inclusion in advertising — Tone toward Compaq in press and with customers — Selection and elevation of other OEMs as leaders — Make integration relations even more strained than they are today — Access to source code, modification ownership — Microsoft directional information and plans — Customers.” GX 433 (sealed).

16. Microsoft repeatedly took actions that make sense only because it has monopoly power to protect.

- i. Fisher, 6/1/99am, at 12:14-17.

16.1. Microsoft’s expensive effort to gain browser usage share can be explained only as an effort to protect Microsoft’s position in operating system and thus demonstrates substantial and durable market power.

- i. As detailed below, Microsoft engaged in a very costly course of conduct designed to gain a substantial share of the market for Internet browsers. See infra Part V.G.
- ii. This conduct evidences monopoly power because, as will be explained (see infra Part V.G.), Microsoft could not have expected to recoup its hundreds of millions of dollars in browser-related costs except by thwarting threats to its position in operating systems and thereby increasing or prolonging its monopoly

profits in operating systems.

16.2. Microsoft's monopoly power is also evidenced by its ability, for several years, to force other firms to cooperate in Microsoft's efforts to exclude threats to its dominant position in operating systems.

16.2.1. This conduct includes, among other things:

- i. Forcing OEMs to accept Microsoft's Internet Explorer browser as a condition of licensing Microsoft's Windows operating system. See infra Part V.B.
- ii. Forcing OEMs to agree to costly restrictions on their ability to customize their PC systems; OEMs agreed to those restrictions, in the words of one executive, because they lack any "choice of another supplier." GX 309. See infra Part V.C.1.b.
- iii. Threatening to retaliate against OEMs that favored products that threaten Microsoft's operating system monopoly. See infra Part V.C.2.a.
- iv. Threatening to retaliate against Intel if Intel developed platform-level software or favored Netscape or Sun in various ways. See infra Part VI.B.

16.2.2. This conduct is part of a predatory course of conduct that makes no sense unless Microsoft expected it to lead to monopoly recoupment in the operating system market. All these acts reduced the value of Windows to end users. Microsoft would not rationally have reduced the value of Windows unless it anticipated that doing so would create or increase monopoly power and thereby enable it to earn greater monopoly profits.

- i. Professor Fisher testified: "Microsoft has, I think, plainly taken actions which only make sense if they believe that they have a monopoly to protect. Those are, of course, the actions which are in large part the subject of this case." Fisher, 6/1/99am, at 12:14-17.

- ii. Dean Schmalensee conceded that, if a firm can impose a tie-in “that implies the firm has some power over price.” Schmalensee, 1/19/99am, at 40:12-22. Dean Schmalensee also previously wrote that: “Evidence that competitors have conspired to fix prices or divide markets is treated as very good evidence that these competitors have market power” (GX 1514), and that such evidence “perhaps” could indicate “monopoly power.” Schmalensee, 1/14/99pm, at 46:14 - 47:6.
- iii. Dr. Warren-Boulton testified that “to the extent there is evidence . . . which shows that Microsoft has . . . used its position in the operating system market to exclude competitors from either that market or from markets that might facilitate the entry of a firm into that market, then that’s direct evidence of the ability to exclude” and “that by itself is direct evidence of the existence of monopoly power.” Warren-Boulton, 12/1/98am, at 32:3-20.

B. Microsoft’s monopoly power is also demonstrated by a structural analysis

17. Microsoft’s monopoly power is confirmed by a traditional structural analysis, which shows that Microsoft possesses a dominant share of a well-defined market protected by immense barriers to entry.

- i. Professor Fisher testified that “Microsoft’s high market share is an indication that it possesses monopoly power. The analysis of barriers to entry confirms that monopoly power exists.” Fisher Dir. ¶ 65.
- ii. Dr. Warren-Boulton likewise testified that Microsoft “possesses monopoly power” because it “for several years has enjoyed, and is projected for several years to retain, a market share in excess of 90%,” and this share “is protected by substantial barriers to entry.” Warren-Boulton Dir. ¶ 7.

17.1. The standard way to determine monopoly power is (1) to ascertain whether a firm possesses a very large share of a properly defined market and then (2) to determine whether substantial barriers to entry protect that share by impeding the ability of rivals to enter or to expand.