

losses) has been much greater than 40%. See supra Part VII.A.2; ¶¶ 364-370.3.

382A.3 Regardless of how the degree of foreclosure is characterized, the fundamental fact remains that Microsoft has maintained its monopoly by means of its exclusionary contracts and predatory conduct.

- i. Microsoft substantially hindered browser rivals from developing into alternative platforms, by the conduct described in Part V, above. See supra Parts V.B.4, V.C.1.b., V.D.4., V.E.3., V.F.1.c., V.G.5.
- ii. The cumulative effect of Microsoft's conduct has been to extinguish the browser threat and maintain Microsoft's operating system monopoly. See supra Parts VII.A.1-4; GX 515 (Microsoft's Kumar Mehta stating: "We set out on this mission 2 years ago to not let Netscape dictate standards and control the browser API's. All evidence today says that they don't.").

B. Microsoft's anticompetitive conduct created a dangerous probability that Microsoft would monopolize the market for Internet browsers

383. Microsoft's ability to thwart the browser threat to its operating system monopoly, as explained, did not require it to obtain monopoly power in Internet browsers. Nonetheless, Microsoft's predatory campaign against browser rivals also threatened to enable it to monopolize the browser market and continues to do so.

1. Internet browsers comprise a relevant antitrust market

384. Internet browsers comprise a relevant antitrust market because there are no good substitutes for browsers.

384.1. Internet browsers perform a specialized function (web browsing) that is not performed by other software.

i. See supra Part V.B.

384.1.1. Microsoft mischaracterizes the plaintiffs' Complaints when it says that plaintiffs allege that the market for "Internet browsers" consists "of all software that enables users to access and view information on the Internet." MPF ¶ 74. The cited section of the United States' Complaint, rather than alleging a browser market so broad as to encompass any software program that would allow users to view Web content, actually says: "Internet browsers are specialized software programs that allow PC users conveniently to locate, access, display, and manipulate content and applications located on the web. Internet browsers are essential for quick, easy, and efficient use of the web and have been instrumental in building the Internet's popularity. No other product duplicates or fully substitutes for the functionality of Internet browsers." U.S. Complaint ¶ 56.

384.1.2. That various types of software programs may serve as simple "viewers" that permit end users to display information in HTML does not mean, as Microsoft asserts, (MPF ¶¶240-43), that there is no market for Internet browsers. Internet browsers perform specialized functions not provided by other software, and other software performs functions not needed by browser users.

i. See supra Part V.B.1.a.(1); ¶¶ 95, 96.4.

384.2. Internet browsers are thus recognized to be a distinct product market.

i. See supra Part V.B.

384.3. Internet browsers are a distinct product market even though today, as a result

of Microsoft's conduct, browsers are not sold at a positive price.

- i. Professor Fisher testified: "There is a market for Internet browsers. Before Microsoft gave away its browser for free, a price for browsers was determined in this market and the market could have continued to perform this function." Fisher Dir. ¶ 80.
- ii. Before Microsoft forced it to drop its price to zero, Netscape charged for its browsers and intended to continue to do so. See supra Part V.G. **Microsoft's assertion that, "in its early days," Netscape gave away "millions of copies of its Web browsing software and continued that free distribution to broad categories of consumers" (MPF ¶ 241) is misleading because it ignores the fact that most of those copies were beta versions and that Netscape intended to and did successfully charge for the actual retail release.**
- iii. Before Microsoft forced the prices of browsers to zero, other browser producers intended to market their browsers at retail. See supra Part V.G.
- iv. Some browsers are, in fact, sold at a positive price. Warren-Boulton, 11/23/98am, at 82:1-2.

2. Microsoft specifically intended to monopolize the browser market

385. Microsoft's campaign to gain browser market share, aimed principally at thwarting the platform threat, also had as its objective monopolization of the browser market.

- i. In an internal e-mail dated July 1997, Microsoft marketing executive Yusuf Mehdi wrote: "we are far from done on the browser front. We are just at 30% but Netscape has shipped a good product far ahead of us and is still very savvy and very interested in keeping their stock price up. We need to execute on IE4, surpass 50% share, and be setup to continue the share gain via great distribution and product before we pull the plug." GX 514. Paul Maritz later responded that, although changing strategy to drive Win98 upgrades instead was "tempting," "we have to remember that getting browser share up to 50% (or more) is still the major goal." GX 514.
- ii. In the Internet Client and Collaboration 3 Year Business Plan dated February 11, 1997, on a slide titled 'metrics,' in the section called 'objectives'-- "Be number 1 in IB browser share" with IB meaning Installed base" -- Microsoft listed its numerical goal at

that time was to “Grow IE IB to 60% by FY00.” GX 413, at MS6 6003203.

- iii. Six months later in August 1997, David Cole, in an e-mail whose subject was listed as “post IE4 thinking (long but please read),” said, “Number 1 goal for IE continues to be market share. Let’s not forget that. We should be aggressive here to force ourselves to think about breakthrough ways to gain share. We should be after 50% by the end of FY98 (June 98) and 75% by the end of FY99 which is June 99.” GX 60.

3. Microsoft’s predatory and exclusionary conduct was reasonably likely to result in Microsoft’s obtaining monopoly power over Internet browsers

a. Microsoft anticipated that its conduct would result in its obtaining a dominant position in Internet browsers

386. At the time it undertook its predatory campaign to protect its operating system monopoly, Microsoft anticipated that its share of browsers (both flow and stock) would reach dominant levels.

386.1. Microsoft projected, including through its own internal “Browser Share Model,” that its exclusionary and predatory conduct would lead to its obtaining a dominant share of the browser market.

- i. Microsoft’s internal “Web-Viewing Share Model” projected, in February 1998, that Internet Explorer’s overall share would range anywhere from 67% (“High Case”) to 59% (“Low Case”) in FY 2001 and assumed that Internet Explorer would have a “run rate on new internet connections” for home users of between 70% and 75%. GX 711.
- ii. Kumar Mehta, reporting to Brad Chase on the results of this model, wrote: “The most important point in this model . . . is that no matter how much you change the assumptions; our share in 3 years is going to be between a conservative estimate of 60% to an aggressive estimate of 68% or so. This is of course barring something radically different happening in the market. We have tried playing with improving and decreasing switch rates; run rates etc; but the model is pretty constant in staying in the 60%+ range.” GX 515.
- iii. Dr. Warren-Boulton testified regarding Microsoft’s model that “the most meaningful share to look at is the overall share in the overall market” and that

the February 1998 projections reflected “a very conservative statement” concerning “Microsoft’s overall projections of its overall

market share” because the model, among other things, included only the United States. Warren-Boulton, 11/23/98am, at 75:7 - 76:6. If the worldwide market was used instead of the United States, the “Base Case” projection would rise “from 62 percent to 67 percent.” Warren-Boulton, 11/23/98am, at 76:7-16.

- iv. In a document titled “Browser Marketing FY99” that is dated May 1998, Microsoft estimated that Internet Explorer’s current “run rate” was approximately 76% and was projected to increase to approximately 88%. GX 173. A “run rate” is the percentage of new Internet connections that use a particular browser. Warren-Boulton Dir. ¶ 13; GX 711.
- v. Microsoft’s prediction led Dr. Warren-Boulton to conclude that “Microsoft expected to gain browser market share in the aftermath of its anticompetitive practices.” Using an internal forecasting model, he explained, Microsoft estimated its browser sales and shares to increase, reaching a share of 65% by the end of Fiscal Year 2001. Warren-Boulton Dir. ¶¶ 136-137 (referencing GX 14).

386.2. Microsoft used projections forecasting a large future share of the browser market to seek to convince firms to abandon Netscape and switch to Internet Explorer.

- i. Professor Fisher testified: “Microsoft relied on its increasing browser market share, and the expected continued increase due to its practices, in trying to convince ICPs to abandon Netscape and agree to Microsoft’s exclusivity provisions. For example, Microsoft, using forecasts from the Giga Information Group, told ICPs that its browser share had increased from 20 percent to 45 percent from 1996 to 1997, and would increase to 65 percent in 1998 and 75% in 1999.” Fisher Dir. ¶ 234 (citing GX 208; GX 15).
- ii. The Giga estimates showed that Microsoft’s browser market share increased from 20% in 1996 to 45% in 1997. The estimates projected that Microsoft’s browser share would increase to 75% in 1999. GX 15; GX 208.

b. Because browsers exhibit network effects, it was likely that Microsoft's initial gains in browser market share would lead to further increases

387. Browsers exhibit network effects that can reinforce the share of the dominant browser providers.

387.1. The technologies used in web sites by developers can favor a particular browser and can thereby result in "positive feedback" that reinforces the share of the leading browser supplier.

- i. Paul Maritz wrote on June 20, 1996: "Without browser share, everything is very hard. So job #1 is browser share. We also have to persuade approx 5 million persons to start using IE over the next 6 months. We have to stop the Nav-Web site reinforcement cycle with IE3 and shift it in the direction of ActiveX. We thus have to get significant share BEFORE Nav 4 ships, and in so doing prevent Web sites from automatically shifting to exclusively exploit it as they did on Nav2." GX 42.
- ii. Bill Gates told Intel that "using Netscape in a Windows environment is not a problem," provided Intel "does not set up the 'positive feedback loop' for Netscape that allows it to grow" into a "defacto" standard. GX 279.
- iii. Jim Barksdale testified that, because Netscape had a large installed base of users, "developers began developing for our browser, and that helped create the need for more browsers from us." Barksdale, 10/22/98pm, at 78:2-9.
- iv. Dr. Warren-Boulton testified: "Browsers, like operating systems, exhibit not only economies of scale, but also network effects. Websites can be written to standards that favor one browser over another. For instance, websites can use technologies that are accessible only by a particular browser or work better with that browser. If Microsoft were to gain a dominant share of the browser market, it might succeed in inducing website developers to write their content using Microsoft-specific technologies." "If a large number of websites are written to such a technology, more end users would switch to IE, which in turn would increase the incentives of website developers to embrace Microsoft-specific technology. The consequence of this instance of 'positive feedback' is that the browser market could tip to a Microsoft monopoly, in which the installed base of Microsoft specific web sites, along with switching

costs, create barriers to entry.” Warren-Boulton Dir. ¶ 89; see also Warren-Boulton Dir. ¶ 89; Warren-Boulton, 11/24/98pm, at 51:6-18 (testifying that “one of the reasons why many of those web site developers may be using Microsoft-specific technologies is because Microsoft is either paying to do it or is providing them with special inducements”)

- v. Gates noted in May 1995 that Netscape’s “browser is dominant, with 70% usage share,” which allows “them to determine which network extensions will catch on.” GX 20.

387.2. In addition, users tend to demand the same browser across operating systems and for use both at work and at home; obtaining a large share of browsers for the dominant operating system or segment can thus reinforce demand for that browser elsewhere.

- i. See supra Part V.B.1.(b)(2); ¶ 108.
 - ii. A Microsoft focus group study in November 1997 shows that “Win32 browser qualities are reflected on to other platform version in users’ minds” and users’ desire “is for one ‘core browser’ with similar UI and same content and feature support across platforms.” GX 218.
 - iii. Dr. Warren-Boulton testified that Microsoft developed non-Windows versions of Internet Explorer “because that was a way to get a higher proportion of sales of IE . . . on Windows computers.” Warren-Boulton, 11/24/98pm, at 33:19 - 34:1.
- c. Microsoft already has more than half the browser market, and its share is increasing**

388. Microsoft already has the largest share of Internet browsers, and its share is increasing.

388.1. Microsoft’s share of Internet browsers has risen to over 50% of the market.

- i. See supra Part VII.A.

388.2. Microsoft’s share is increasing and projected to rise even further.

- i. Even the MDC data shows a clear upward trend in Internet Explorer’s share with a 44 percentage point increase from early 1996 to late 1998.

Schmalensee Dir. App. D ¶ 42 and Fig. D-3; Schmalensee Dir. Exec. Sum. ¶ 9 & Fig. E-1; Schmalensee Dir. ¶ 289-290, Fig. 4 & Tbl. 7.

- ii. Giga Information Group prepared graphs illustrating Netscape and Microsoft's actual and projected shares of the Browser market. The graphs estimated Netscape's share as 70 percent in 1996 and 20 percent in 1999. Giga Information Group predicted Microsoft's share of the Browser market to be approximately 20 percent in 1996 and 75 percent in 1999. GX 15; GX 208.

388.3. Microsoft's argument that it is not likely to attain monopoly power in the browser market (MPF ¶¶ 249-56) is based on mistaken data analysis.

388.3.1. Microsoft argues that the AdKnowledge data on which plaintiffs rely "undercount use of Web browser software by certain large categories of users." MPF ¶¶ 249-56. But, any such undercounting would underestimate Internet Explorer's increase in share.

- i. **See supra Part VII.A.3; ¶ 369.1.3; Part VII.A.5; ¶¶ 382.1.2, 382.1.3, 382.1.5.**

388.3.2. Microsoft relies on survey data from MDC to support its argument that Internet Explorer is not likely to monopolize the browser market. MPF ¶ 246. But the MDC data are seriously flawed and do not reliably assess the decline in browser rivals' share; and, with respect to the critical question of the increase in Internet Explorer share, the MDC data show essentially what the AdKnowledge data show: Internet Explorer's share is continuing to increase significantly.

- i. **See supra Part VII.A; ¶ 377.1.**
- ii. **See supra Part VII.A; ¶ 359.4 (browser threat diminishing with Internet Explorer's increase in share).**
- iii. **See supra Part VII.A.3; ¶ 369.3; MPF ¶ 250 (the MDC data show**

virtually the same increase in Internet Explorer's share as the hit data presented by Professor Fisher and Dr. Warren-Boulton).

- iv. Microsoft concedes that from October 1997 through the end of 1998, the MDC and AdKnowledge data provide "roughly similar estimates of the respective market shares of Internet Explorer and Navigator." MPF ¶ 248.**
- d. Substantial barriers to entry would ensure that Microsoft could exercise monopoly power in browsers**

389. Microsoft had reasonable prospects of obtaining monopoly power in browsers, not only because it was likely to obtain a dominant market share, but also because substantial entry barriers would secure Microsoft's dominant position.

- i. Professor Fisher testified: "If Microsoft succeeds in acquiring a monopoly in Internet browsers, the monopoly will be protected by substantial barriers to entry. With ownership of the desktop, Microsoft can easily control the most common browser distribution channels, including distribution through OEMs and ISPs. Without an effective method of distribution, competitors' browsers pose little threat to IE. Moreover, natural barriers to entry would protect Microsoft's browser market share. Developers would tend to create Web sites that accommodate the dominant IE technology, which would increase users' demand for IE, generating a cycle that would reinforce IE's monopoly in the browser market." Fisher Dir. ¶ 239.

389.1. First, developing a quality browser requires incurring significant sunk costs, which is a substantial entry barrier.

- i. Brad Chase testified that the "cost of rebuilding" Internet Explorer 2.0 into Internet Explorer 3.0 was "high. We dedicated a team of more than 100 developers to the Internet Explorer 3.0 effort. . . . And this level of investment was not a guarantee of success." Chase Dir. ¶ 20.
- ii. Microsoft represented that its development costs for Internet Explorer were approximately 100 million dollars a year. See supra Part V.G. (describing the large costs associated with developing a quality browser).

389.2. Second, a new entrant competing against Microsoft's browser would have to

overcome network effects that tend to entrench incumbents.

- i. In an internal Microsoft e-mail dated April 1997, Chase wrote: “Content drives systems. Windows won the desktop OS battle because it had more applications earlier than any other platforms.” He stated, “We must make sure that the best Web applications and content becomes available for IE users first.” GX 510, at MS7 004130; GX 39, at MS6 500571 (same).
- ii. Professor Fisher testified: “If Microsoft’s conduct is not checked it is very likely to create a world in which entry into browsers is difficult or impossible (partially as a result of network effects).” Fisher Dir. ¶ 23.
- iii. Professor Fisher further testified: “Barriers to entry (including network effects and the results of Microsoft’s conduct) exist which prevent companies that might be able to produce a browser from entering the browser market.” Fisher Dir. ¶ 81.

389.3. Third, Microsoft’s demonstrated willingness to engage in predatory conduct -- including raising the costs of using key distribution channels -- to prevent firms from gaining a substantial share of Internet browsers has deterred, and is likely to continue to deter, firms from entering the browser market.

- i. Sun dropped its plans to promote its browser as a stand-alone product following Microsoft’s forcing of browser prices to zero. See supra Part V.G.5.a; ¶ 307.
- ii. See also Fisher, 1/5/99pm, at 79:15-17 (“I do not know . . . of any sort of serious entrant into the browser market, period.”); Fisher Dir. ¶ 22 (“Microsoft’s conduct has created, preserved, and increased barriers to entry into both the PC operating system market and the Internet browser market.”); Fisher Dir. ¶ 81 (explaining that, “by bundling its browser with its operating system and giving away its browser for ‘free,’ Microsoft effectively prevents companies from successfully entering the browser market unless they successfully enter the operating system market at the same time.”).

389.4. Fourth, Microsoft’s ability to enter successfully against Netscape is not to the contrary because Microsoft was able to use assets other entrants would lack -- including its operating

system monopoly -- and because the browser market was not mature, and penetration of the market was low, when Microsoft entered.

- i. “Despite the huge browser-related costs it was incurring, Microsoft distributed its browser at a negative price. The IE browser was not only given away free; companies were given valuable concessions to accept, use, distribute, and promote IE.” Fisher Dir. ¶ 123.

e. Microsoft was reasonably likely to acquire monopoly power in Internet browsers

390. Regardless whether Microsoft was likely to drive other browser producers out of business altogether, Microsoft was likely to acquire a large enough share of the browser market to enable it to exercise monopoly power.

390.1. Obtaining monopoly power requires only a durable, dominant share, not 100%, of the browser market.

- i. Professor Fisher estimated that, if Microsoft gets fifty percent share in the browser market, the company “will certainly have some degree of monopoly power.” Fisher, 1/6/99pm, at 35:5-12.
- ii. Dr. Warren-Boulton testified that, although he could not give an exact number, “Given the characteristics of the browser market, I would expect that reaching a share on the order of about 70 percent is, if I had to pick a number, likely to be the level at which I would expect to see Microsoft able to exert monopoly power in the browser market.” Warren-Boulton, 12/1/98am, at 15:9-16.

390.2. Microsoft was reasonably likely to obtain a sufficient share to enable it to exercise monopoly power in browsers.

- i. Professor Fisher testified: “It is probable that in the absence of intervention, Microsoft will obtain monopoly power in the market for Internet browsers.” Fisher Dir. ¶ 79. He elaborated: “Microsoft is using its monopoly power over PC operating systems to secure monopoly power over Internet browsers. While Microsoft has not yet succeeded in monopolizing browsers, Microsoft’s

browser market share grew significantly and Netscape's browser market share declined significantly from 1996 to the middle of 1998. As described in detail above, several sources indicate that Microsoft enjoys a browser market share of about 50 percent or more." Fisher Dir. ¶ 238.

- ii. Dr. Warren-Boulton testified, based on among other things Microsoft's own browser share model, that "there is a dangerous probability that Microsoft will gain monopoly power in the browser market." Warren-Boulton Dir. ¶ 152; Warren-Boulton Dir. ¶ 16(6) (testifying that "under current conditions, Microsoft's share of browser usage can be expected to continue to increase rapidly. Should Microsoft's anticompetitive conduct continue, there is a dangerous probability that Microsoft will monopolize the browser market").

4. Microsoft's monopolization of the browser market would increase the harm to competition already caused by Microsoft's effort to blunt the browser threat

391. Microsoft's monopolization of the browser market would exacerbate the harm to competition caused by Microsoft's campaign to blunt the browser threat.

391.1. Microsoft's monopolization of the browser market would further deter and impede entry into and competition in that market.

- i. Professor Fisher further testified: "If Microsoft's conduct is not checked, it is very likely to create a world in which entry into browsers is difficult or impossible (partially as a result of network effects). In that world, platforms that do not use a Microsoft standard will never prosper, and a critical opportunity for innovation that reduces or eliminates Microsoft's power will have been lost." Fisher Dir. ¶ 23.

391.2. Microsoft's tighter grip over the browser market would augment its ability to blunt threats to the applications barrier to entry that depend on a browser (or browser-based client) and increase its ability to project its monopoly power into related markets, such as the market for server operating systems.

- i. See infra Part VII.D.