D.   Microsoft's entire course of conduct has caused, and will continue to cause, substantial and far-reaching harm to competition

397.   Microsoft's blunting of the browser threat substantially reduced the probability of a paradigm shift that could erode the applications barrier to entry and by itself maintained Microsoft's operating system monopoly. Microsoft's campaign against the browser threat, however, was part of a broader course of conduct against middleware. That broader effort had as its objective reinforcing the applications barrier to entry even further by extending Microsoft's ability to influence and control the standards used in rapidly-developing Internet and network-based computing. Through its anticompetitive scheme, Microsoft has largely succeeded in its objective and is poised to continue its effort to extend its monopoly power.

1.   Microsoft's anticompetitive conduct aimed at blunting middleware threats reinforced the applications barrier to entry by extending Microsoft's ability to influence or control standards

398.   The rise of the Internet, and more generally network-based computing, presented a special threat to the applications barrier to entry into the operating system market. Network-based computing rapidly both became an important way users employed their PCs (such as by using the Internet or a local LAN) and threatened to develop new interfaces and standards that Microsoft did not control. Browsers and other platform-level components of network-based computing quickly became extremely strong complements to Windows, and the platform they could present to developers thus posed an especially powerful threat to the applications barrier to entry.

i.   In April 1995, with the rise of the Internet, an internal Microsoft e-mail to Bill Gates, Nathan Myhrvold, Paul Maritz, and others, warned: "The Internet defines formats and architectures that MS had no control over and very little say in." The email discussed Microsoft's strategies for maintaining control over Internet

standards and protocols, including giving the "viewer" (the browser) away in order to "shift" momentum "to MS formats and architecture." Russell Siegelman, the Microsoft executive then in charge of MSN, concluded that "I don't think that the way to fight back is simply with a 'better Web browser' either." He continued: "And there are some interesting questions about the viewer/client side, integration with Ohare, Office and Blackbird that need to be worked out." GX 16, at MS98 0107183-84.

ii.   In May 1995, Ben Slivka warned Microsoft executives and others within Microsoft that "The Web is the Next Platform." He wrote a detailed memorandum asking "Why is the Web a Threat to Windows?," and making recommendations for how Microsoft should blunt the threat. He described that threat as follows: "<u>The Web</u> (as I will loosely refer to the Internet and it's evolving data formats and protocols) exists today as a collection of technologies that deliver some interesting solutions today, and will grow rapidly in the coming years into a full-fledged <u>platform</u> that will rival -- and even surpass -- Microsoft Windows." GX 21, at MS98 0102394 (emphasis in original).

iii.   Bill Gates summarized his apprehension about the threat posed by Internet standards and network based computing in his May 26, 1995, memorandum on "The Internet Tidal Wave." Among other standards, Gates believed that "HTML with extensions will be the standard that defines how information will be presented." GX 20, at MS98 0112876. He later concluded that Microsoft needs to make sure to "output information" in standard HTML and "in the extended forms" promoted by Microsoft. GX 20, at MS98 0112876.5.

iv.   In April 1995, an e-mail from Rich Rashid to Bill Gates, Craig Mundle, Nathan Myhrvold, and Russell Siegelman details the threat posed to Windows by HTML as a user interface. He writes: "It is dangerous from our prespective [sic] of wanting to make and preserve valuable standards." GX 17.

v.   <u>See</u> <u>also</u> Maritz Dir. ¶¶ 259-60; DX 1490; GX 52, at MS7 003270, MS7 003272; Fisher Dir. ¶ 86.

399. Microsoft recognized that controlling Internet-based standards and interfaces (for instance, by encouraging or forcing the use of Microsoft-specific extensions) and hindering technologies that could advance those standards in ways not controlled by Microsoft (in particular, the browser) were critical to maintaining the applications barrier to entry.

i.   Ron Whittier of Intel reported that Maritz told Intel, in the August 2, 1995,

meeting, that the Internet is a platform. Maritz, Whittier reported, said that "standards engender end user values, which engenders more standards with more end user value-- 'feedback mechanism'" and "is the key is to win the client (patch up the server later)." GX 279, at 2.

ii.   In his extensive May 1995 memo, "The Web is the Next Platform," Microsoft's Ben Slivka wrote that "we should be extending the web with as many Microsoft technologies as possible, even if we have to modify those technologies in ways not original [sic] intended by their designers." He concluded that, "If Microsoft doesn't enhance the Web, there is a nightmare scenario where an OS-neutral Web platform arises, and then a company like Matsushita or Siemens could come out with a $500 'Web Box' that runs web applications (with no need for Windows, or MS-DOS compatibility, or Intel compatibility), and consumers make the obvious choice between a $2000 Windows PC and the $500 Web Box. Say good-bye to Windows." GX 21, at 4.

iii.   A June 1996 Microsoft marketing report, "Winning @ Internet Content," states: "The rise of the Internet has been driven by the success of a series of 'platforms' that utilize these protocols at their core and provide a set of APIs for ISVs to develop on top of. By far the most successful platform to date has been Netscape's, with Netscape Navigator on the browser and Netscape Suite Spot on the server. The core threat for Microsoft is the potential for this platform to abstract the Win32 API. For example, if Netscape continues its success in getting ISVs and ICVs to develop applications for Netscape's client/server Api's, these API's could be the most important API's in the future, putting Win32 and Microsoft's platform position in jeopardy." GX 407, at MS6 5005709.

iv.   Professor Fisher testified that "control over the way in which P.C.'s access the world wide web has a good deal to do with maintaining Microsoft's monopoly in operating systems." Fisher, 1/6/99am, at 12:8-11.

400.   Microsoft thus strove to impede not only the browser threat, but also more generally other potentially significant middleware platforms. Doing so facilitated Microsoft's control over standards, in particular network-centric and Internet-related standards.

i.   Steven McGeady testified that Paul Maritz told Intel that Microsoft's strategy was to "embrace, extend, extinguish." McGeady, 11/9/98pm, at 53-55; McGeady, 11/10/98am, at 22:6-7; GX 564, at 477MSC1D00273.

ii.   McGeady testified that Microsoft was going to take Internet standards, like HTML, "and extend it to the point where it was incompatible with the Netscape

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browser and encourage people to develop to their version of HTML so that pages couldn't be read with Netscape's browser." McGeady, 11/9/98pm, at 55:7-14.

iii.   In a January 1997 e-mail to Maritz and other top staff, Gates wrote that it is "wrong" to conclude that Microsoft would not make unilateral extensions to HTML and that, unless Microsoft intends to use its browser in a proprietary manner, Microsoft would have to "stop viewing HTML as central to our strategy and get on another strategy" to avoid having middleware take over the operating system. GX 351.

401.   To maintain control over network-centric computing and standards, therefore, Microsoft engaged in a broad course of conduct designed to prevent a substantial middleware platform from emerging; Microsoft's campaign to blunt the browser threat did not occur in a vacuum.

401.1.   Microsoft used anticompetitive means, as explained, to impede cross-platform Java and encourage use of its Windows-specific version of Java instead.

i.   See supra Part VI.A.

401.2.   Microsoft required applications developers, in return for commercially necessary early access to Windows releases, to use Microsoft standards and Microsoft's version of Java as the default technology in their applications.

i.   See supra Part V.F; Part VI.A.

401.3.   Microsoft used anticompetitive means to hinder Intel's efforts to develop platform-level software because Microsoft viewed such software as a long-term threat to its control over APIs.

i.   See supra Part VI.B.

401.4.   Microsoft repeatedly made clear to other firms, including among others Apple and RealNetworks, that efforts to develop potentially rival middleware software was

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unacceptable to Microsoft.

   i. <u>See</u> <u>supra</u> Part IV.B

   2. **Microsoft has achieved its objective of retaining significant influence over network-based standards and application development**

  402. Microsoft's anticompetitive conduct, which blunted the browser threat and impeded other middleware threats from developing, including network-based platforms, achieved its objective of gaining significant influence over network-based standards and reinforcing the applications barrier to entry.

   402.1. Microsoft's large browser share gives it substantial influence over network-based standards because, the larger Internet Explorer's share of browser usage, the more influence Microsoft has over Web-development standards.

     i. Applications developers will not likely base features upon a browser with a low usage share. Microsoft had difficulty, when Internet Explorer's share was approximately 30%, convincing its own developers in the Office group to target "XL and Access publishing features only at IE4 . . ." It was a "hard decision for them (based on IE's current market share)." GX 514, at MS7 007506.

     ii. In 1995, Maritz wrote to Gates and other top executives of his concern that Netscape -- if it gained a "significant" market share -- could benefit from a "feedback loop" allowing it to introduce "protected features (via IP protection and/or via 'secure' handshakes between clients and servers)." GX 498, at MS98 016814.

   402.2. Microsoft's efforts to impede other cross-platform technologies and to encourage the use of Microsoft-dictated standards also hindered the development of Microsoft-independent interfaces that could be an important component or complement to a network-based platform.

     i. For evidence demonstrating Microsoft's anticompetitive efforts to

encourage and force use of its Windows-specific implementation of Java, see supra Part VI.A.

ii.   For evidence demonstrating Microsoft's anticompetitive effort to force use of Windows-specific standards, see supra Part IV.B.

iii.   Professor Warren-Boulton testified that the platform that Microsoft's conduct prevented "all indicators are, is not just Netscape. It is a large set of applications which are cross-platform. . . . The concern, if you like, that is created by increasing share by Microsoft of the browser market is the frustration of something which is we don't know for sure exactly what it's going to be." Warren-Boulton, 11/23/98am, at 80:13-21.

402.3. At some point, Microsoft's control over standards is likely to become

self-reinforcing.

i.   Dr. Warren-Boulton testified that: "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. . . ." and this would "mark the death knell of the threat posed by non-Microsoft browsers." Warren-Boulton Dir. ¶ 89.

ii.   See also supra Part VII.B (attempt to monopolize)

3.   Microsoft's effort to blunt threats to its control over standards, and to extend that control, will inhibit the emergence of other possible paradigm shifts

403.   The combined effect of Microsoft efforts to ensure no other firm controls standards, in particular Internet-related standards, and its development of a reputation as a predator is to decrease substantially the likelihood that a serious platform-level threat, such as Netscape's browser, can arise in the future.

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403.1. The anticompetitive tactics Microsoft employed served its goal of

preserving the applications barrier to entry not only by creating additional power over standards,

but also by deterring other firms from developing platform-level software that could challenge

Microsoft's operating system monopoly.

i.   Professor Fisher testified: "Microsoft has given signals to the world," both through its actions with regard to browsers and Java, "and through its actions as regards Apple and Intel, Microsoft cares a lot about whether there are going to be innovations that might, in one way or another, present a platform threat; and that if you want to make innovations in that direction, you're going to have to deal with Microsoft in a very, very serious way. That is also a way of blunting or preventing future platform threats." Fisher, 1/12/99pm, at 22:10-18; see also Fisher, 6/2/99am, at 25:16 - 26:3 (similar).

ii.   Microsoft made public statements that were intended to and did send notice, if any was needed, to potential competitors that Microsoft would deprive potential competitors of revenue.   Top Microsoft executives were quoted in the press questioning Netscape's business model and its potential for survival in light of Microsoft's pricing policy. GX 71, at 4 (6/95 Financial Times article quoting Gates "Our business model works even if all Internet software is free.   We are still selling operating systems. What does Netscape's business model look like if that happens? Not very good."); GX 83 (7/3/99 Financial Times article quoting Gates to same effect); GX 103, at 2 (Forbes quoting Microsoft's Steve Ballmer, regarding Netscape: "We are giving away a pretty good browser as part of the operating system. How long can they survive selling it?").

iii.   Barksdale testified: "The software industry is watching this case closely, for if Microsoft is permitted to use its Windows-derived monopoly power to 'cut off the air supply' of innovative products that threaten Windows and innovative companies that compete with Microsoft, there are few, if any, other companies that will try to do what Netscape has done. If this occurs, consumers and innovation will surely suffer." Barksdale Dir. ¶ 8.

403.2. Although Microsoft has suggested that network-centric applications (those

based in web-pages, on servers, or on other network) pose a threat to the applications barrier to

entry (Schmalensee, 6/23/99am, at 36:15-25), such applications cannot threaten Microsoft's

monopoly power as long as Microsoft controls a substantial share of browser usage.

403.2.1. Web-centric applications require a browser.

i.   Inergy, a firm creating Web-based applications, requires that users access its applications with a browser. Dean Schmalensee testified that in order to access the WebDesk 2000 product, users must have a browser. Schmalensee, 6/23/99am, at 28:21-25; DX 2554, at 4 ("Inergy software services require only an Internet connected device and a Web browser.").

403.2.2. Microsoft's substantial share of browsers gives it control over

browser technology and thus the power to discourage the development of network-centric

applications.

i.   Paul Maritz testified that browsers using Microsoft's technology are not a platform threat (Maritz, 1/26/99pm, at 48:22 - 49:7) a conclusion with which Dean Schmalensee agreed. Schmalensee, 6/24/99am, at 51:23 - 52:16.

ii.   Ron Rasmussen, an executive with operating system supplier Santa Cruz Operation, testified that "in the network computing model that is part of our core strategy, the browser and the Java that it can run will be the user interface for the application on the server. And so if there is one person or one company who controlled the browser and its look and feel and how it presented applications, it could severely enhance or detract from the application functionality of the -- on the server." Rasmussen Dep. (played 12/15/98am), at 67:14 - 68:3.

iii.   Nathan Myhrvold wrote Bill Gates in April 1995 that "the world of the Internet is rapidly becoming Windows centric because Windows will be the most popular client operating system by a wide margin." GX 611, at MS98 0157820.

iv.   Professor Fisher recognized that "if IE were the dominant browser and Microsoft decided to support only Windows-based technology, developers would have little incentive to create applications that were not Windows-based." Fisher Dir. ¶ 95. He concluded: "If Microsoft minimizes competition from other browsers and chooses to support only Windows-based technology, Microsoft can

maintain its monopoly power in operating systems with little threat of entry." Fisher Dir. ¶ 236.

v.   Dean Schmalensee conceded that "if one company controlled the browser and its look and feel and how it presented applications, it could severely enhance or detract from the application functionality of programs or applications running on the server." Schmalensee, 6/24/99pm, at 46:19 - 47:10. This would be because "the browser and the Java that can run will be the user interface for the application on the server." Rasmussen Dep., 6/24/99pm, at 46:6-14.

403.3. Microsoft's weakening of cross-platform Java also diminishes the

likelihood that a robust set of cross-platform network-centric applications could emerge.

i.   Barksdale described the importance of browsers and Java to development of a new breed of applications focused on the Internet: "Netscape's browser, using Java, provided both the technical means and the broad distribution to offer a new 'super-platform' for developers of network-centric applications. This platform aspect of the browser, and the cross-platform benefits of Java, allowed for the development of software applications that were directed more to the Internet than to the desktop, and thus had the potential to serve as a partial substitute for the Windows OS as a development platform." Barksdale Dir. ¶ 15.

ii.   Barksdale also testified: "If ISVs began writing a number of programs in such languages, computer users with a browser could launch those programs from the browser platform without regard to the underlying operating system. In other words, it would not matter to the consumer whether the computer had a Windows operating system, Macintosh, OS/2, UNIX, or any other operating system. The rise of the Internet and browser technology, coupled with Java and other new languages, promised the development of 'platform independent' software. ISVs would be able to write a program once, and it would run on any computer." Barksdale Dir. ¶ 85.

403.4. Microsoft's establishment of a substantial position in browsers may also

enable it to impair competition and seek to control standards in related markets, such as servers

and applications that employ browsers.

i.	Brad Chase wrote: "In summary, we must keep our focus on browser share. This is central to the success of Windows and central to the success of Office. By focusing on IE today, we not only secure the desktop and secure future Windows sales, but also gain a user base that we can upgrade to Outlook and then Office." GX 510, at MS7 004127.

ii.	Paul Maritz, in an April 1995 document entitled "Netscape as Netware," wrote: "I think the most important thing we can do is to 'not lose control' of the Web client. By controlling the client, you also control the servers. We should not allow any one Web client to get to high volume. This means (i) not letting a vacuum open up, and (ii) ensuring that we get broad distribution for our Web client. This would mean that: -- MS Web client gets bundled with Windows (not just Frosting?) at earliest opportunity." GX 498, at MS98 0168614. At trial, Maritz agreed that by "controlling the client, you would also control the servers" and that Microsoft "did not want to allow any one web client to get the high volume." Maritz, 1/28/99pm, at 45:5-15.