UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

STATE OF NEW YORK, et al. Plaintiffs, v. MICROSOFT CORPORATION, Defendant	Civil Action No. 98-1233(CKK)

BRIEF OF PROFESSOR TIMOTHY BRESNAHAN, PROFESSOR RICHARD GILBERT, PROFESSOR GEORGE HAY, DR. BRUCE OWEN, PROFESSOR DANIEL RUBINFELD AND PROFESSOR LAWRENCE WHITE AS *AMICI CURIAE*

I. SCOPE AND BACKGROUND

This court faces the difficult task of crafting remedies in a significant and complex antitrust case, *State of New York et al. v. Microsoft.* Our purpose is to describe the economic principles that should guide the search for appropriate remedies in this and other monopoly maintenance cases. The principles of remedy are well known. They set out two goals: restoring competition and preventing further anticompetitive conduct. In this submission we discuss how these broad principles apply when potential competition has been suppressed at an early stage in its development.

We do not seek to advise the court on the wisdom of any of the remedial options before it. Our commentary relating to the Microsoft case itself is limited to the facts the Court has already found.

We have each served as Chief Economist of the Antitrust Division of the United States Department of Justice. We served in a number of different administrations, and under a number of different Assistant Attorneys General. We are, of course, speaking as economists, and not in any official capacity.

The opinions here are our own, and not offered on behalf of any party. [1] No one has asked us to make this submission.

II. INTERFERENCE WITH THE COMPETITIVE PROCESS OF ENTRY

In the present case, the District Court has found, and the D.C. Circuit Court of Appeals affirmed, that Microsoft's conduct thwarted entry and new competition into the market for Intel-architecture personal computer operating systems.

The Court found that Microsoft's Windows monopoly is protected by an "applications barrier to entry" and that Microsoft's anticompetitive acts kept this barrier high when technical progress threatened to lower it. The widespread use of certain complements for the Windows operating system, such as the Netscape browser or Java, would have weakened the applications barrier to entry. To an economist this means that the Court adopted a two-step theory of entry and competition in the operating system (O/S) market. Step one was the widespread distribution and adoption of competitively threatening middleware—a particular kind of complement for Windows. Establishment of middleware standards outside Microsoft's control would have lowered entry barriers in the operating system market. Step two would have been entry and competition by substitutes for Windows.

The Court concluded that Microsoft interfered with the widespread distribution of new middleware technologies so that step one could not be completed. Step 2 was therefore blocked. This greatly reduced the possibility of new competition. [2]

The purpose of the Sherman Act is to protect competition for the benefit of consumers. We recognize that harm to a competitor is not the same as harm to competition. More specifically, a finding that a potential competitor has been excluded from a market is not sufficient to establish an antitrust violation. Our focus is on the economically appropriate standard for remedies in a monopoly maintenance case where antitrust liability has been determined.

The Court did not find that absent Microsoft's unlawful conduct significant operating system competition would have occurred immediately and with certainty. This has led some to suggest that there

has not been a sufficient finding of causation to require remedial measures that restore competition or block future anticompetitive acts beyond the narrowest limits. More specifically, it has been argued that this Court must limit remedies to the proscription of specific unlawful acts, unless it is shown that competition would certainly have dissipated Microsoft's monopoly but for those acts. We respectfully disagree with this proposition.

A successful pattern of monopoly maintenance typically eliminates the very evidence that would be necessary to prove the proposition that entry would otherwise have dissipated the monopolist's market power. The essence of maintenance lies in extinguishing a competitive threat while it is nascent. At that stage, a competitive threat represents a *probability* of entry and new competition, not a certainty.

Like Netscape Navigator and Sun's Java architecture, many new technologies have a period of vulnerability before they are fully established. If they are removed as competitive threats during that period, there can be no market test to prove – or disprove – their ultimate competitive impact.

Every entry attempt, whether it is from a new personal computer operating system, such as Linux, or from improvements to an existing operating system established on smaller computers, such as the Palm O/S, or from an operating system running on server computers, has some probability of creating new competition. While that probability may be small, consumers may still benefit (and sometimes substantially) from the entry attempt.

Given that the Court found that Microsoft had acted unlawfully to maintain its monopoly, consumers are entitled to relief even where there is no certainty that challenges to Microsoft's monopoly would have been successful. For one thing, the challenge might have been successful, and consumers have been denied the benefits they would have received in that event. For another, even a challenge which is ultimately unsuccessful may cause the incumbent to compete more vigorously (in a legitimate way, by lowering prices, improving quality or becoming more responsive to consumers' needs) to defend against the threat, and this vigorous competition is a direct benefit to consumers.

The certainty standard is especially inappropriate for markets, such as the market for Intel-architecture personal computer operating systems, where entry and new competition take the form of low

probability, but high impact, events. An important characteristic of such markets is the existence of network effects, which reinforce market success and make it difficult to dislodge market leaders. Substantial competition, when it occurs, tends to come from entry of new competitors or from the expansion of previously insignificant competitors, often in response to new technological opportunities. While such technological opportunities are rare, the Court found that the widespread use of the Internet by consumers was an "inflection point," that is, it was an occasion on which "market leaders are superseded."[3] In other words, it was the kind of infrequent but highly significant event that may trigger entry and new competition.

Furthermore, potential competitors' incentives to invest in new technologies that might replace a monopolist are affected by the success of anticompetitive acts. Looking forward, potential competitors will see not only the costs of inventing a new and potentially superior alternative, but also the costs of overcoming anticompetitive acts directed at them. If the present anticompetitive acts convince future competitors that they too will face anticompetitive acts, then there is a multiplier effect. The total negative impact on competition is the sum of the present competitors thwarted and future ones discouraged. If a monopolist can be enjoined only from specific acts shown to have excluded competitors from the relevant market with *certainty*, monopolists will have strong incentives to acquire reputations for creative termination of prospective entrants, thereby harming competition and consumers.

From an economic perspective competitive entry is a part of the free market system. Unlawfully thwarting the free market by blocking competitive entry to maintain an existing monopoly harms competition, even if the entry and competition are not certain. This is particularly so in a dynamic, innovative market characterized by strong network effects, such as this one, where entry is a particularly important competitive mechanism. The effect of such interference lasts until the next "inflection point."

III. THE COURT'S THEORY OF HARM TO COMPETITION OFFERS GUIDANCE WITH RESPECT TO REMEDIES

The District Court found and the Circuit Court affirmed in the present case that Microsoft's unlawful actions did elevate entry barriers by blocking widespread distribution of and technical collaboration with innovative middleware and that entry might well have occurred absent the anticompetitive acts. These

findings offer guidance with regard to the appropriate remedies to restore competition and prevent future violations. Restoration of competition requires lowering entry barriers now to compensate for the effects of the unlawful barriers of the past. Preventing future violations calls for making it harder for Microsoft to interfere with market choice of new middleware now and in the future.

Over the period 1995-1998, Microsoft's unlawful acts stopped the first step--the widespread adoption and distribution of middleware -- in the two-step entry process. The Court examined the anticompetitive acts in step one with regard to two middleware products, the Navigator browser from Netscape and Sun's Java architecture.[4] Those technologies had, in the Court's estimation, the potential to lower entry barriers. Microsoft's anticompetitive acts made (in the Court's view) a material contribution to the failure of entry barriers to fall. The appropriate analysis of remedy should be based on the finding that, but for the unlawful acts, entry barriers would have been lower at that time and also would today be lower than they are.

A. Implications with respect to remedies

To restore competitive conditions after a monopolist has unlawfully raised entry barriers requires the Court to lower entry barriers into the relevant market. That does not mean, however, that the remedy must with certainty lead to immediate competition in the market. Lowered entry barriers as a result of remedial action will re-open a market process. It may lead to new competition *in* the Intel-architecture personal computer operating system market or new competition *for* that market, in which Windows is replaced by a new and superior product. Both possible outcomes are desirable from a consumer perspective. Lowering entry barriers may also lead to Window's continued success after a period of competition on the merits against new entrants. That, too, would be a beneficial outcome if achieved by a market test of new technological improvements in Windows against other new operating system technologies.

Restoring competition means lowering entry barriers today sufficiently that market forces can determine the extent and form of competition in the operating system market. Ideally, the remedy should establish a process of market entry and competition beginning now that gives consumers approximately as

much choice as the competitive process that would have begun in 1995 but for the anticompetitive acts.

Microsoft, when it raised entry barriers, harmed competition in three ways. First, the opportunity for competitive entry associated with the widespread use of the Internet – an "inflection point" – has been lost. Second, for several years since then, potential entrants have faced high entry barriers where, absent the violations, they would not.[5] Third, both potential middleware sellers and developers of potential substitutes for Windows have been discouraged by the success of Microsoft's anticompetitive acts. Restoring competition means, in concept, giving consumers as much opportunity to consider alternatives to Windows as they would have had if none of these three effects had occurred. That standard calls for remedies that go beyond merely blocking the illegal acts.

In considering the scope of appropriate remedies, it is important to distinguish analytically between procompetitive actions or rules the Court could undertake or impose now, and actions or policies that would have been lawful for Microsoft to undertake in the past. What should guide the Court now is a search for procompetitive actions and rules, the first of those two standards. An example may clarify this principle. Suppose the Court were to find that a "port" of Microsoft's Office suite to Linux would increase competition by lowering the applications barrier to entry for Linux. [6] That would not necessarily imply that the historical failure of Microsoft to port Office to Linux was unlawful. The Court should consider compelling (or blocking) actions that might not have been required (or forbidden) under the antitrust laws, but are procompetitive in today's context, distorted as it is by the legacy of monopolization. It is our recommendation that the Court cast a wide net, looking for rules or actions that will increase competition today by lowering entry barriers.

It would, however, be unwise for the Court to attempt to assess the probability that any particular entrant would have succeeded. It is the market's task, not the task of the judicial system, to determine whether any of the potential entrants has the real capacity to compete against Windows. The market should pick the winner or winners in this race. In its assessment of remedies, the Court should assure that all the horses get to the starting gate from which they have been blocked by Microsoft's unlawful acts.

Our objective in this submission is not to convince this Court to adopt specific remedies for Microsoft's conduct. Our purpose is a narrow one: to stress a simple principle of the economics of uncertainty and of competition. The principle is that an uncertain prospect of a gain or loss is not negligible just because it is uncertain. As applied to competition, the principle implies that when competitive entry is uncertain, unlawful acts that make it less likely are harmful despite the uncertainty. That the threat of competition to Microsoft's operating system monopoly was nascent does not reduce the economic significance of Microsoft's unlawful acts. It would be bad policy if the law does not permit remedies that compensate consumers for eliminating competitive threats merely because the threats never became certainties.

Dated: Stanford, California Respectfully submitted,
June 18, 2002

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[1] None of us is consulting with respect to any issues involved in the current Microsoft litigation.

[2] Findings of Fact, 411: "There is insufficient evidence to find that, absent Microsoft's actions, Navigator and Java already would have ignited genuine competition in the market for Intel-compatible personal computer operating systems. It is clear, however, that Microsoft has retarded, and perhaps altogether extinguished, the process by which these two middleware technologies could have facilitated the introduction of competition into an important market."

[3] See FoF 59-60: "What eventually displaces the leader [in a software category] is often not competition from another product within the same software category, but rather a technological advance that renders the boundaries defining the category obsolete. These events, in which categories are redefined and leaders are superseded in the process, are spoken of as 'inflection points.'
The exponential growth of the Internet represents an inflection point born of complementary technological advances in the computer and telecommunications industries."

[4] Browser, see FoF 377. "In late 1995 and early 1996, Navigator seemed well on its way to becoming the standard software for browsing the Web. Within three years, however, Microsoft had successfully denied Navigator that status, and had thereby forestalled a serious potential threat to the applications barrier to entry." and FoF 358 "The relative [browser usage market] shares would not have changed nearly as much as they did, however, had Microsoft not devoted its monopoly power and monopoly profits to precisely that end." Java: See FoF 407 "It is not clear whether, absent Microsoft's interference, Sun's Java efforts would by now have facilitated porting between Windows and other platforms enough to weaken the applications barrier to entry. What is clear, however, is that Microsoft has succeeded in greatly impeding Java's progress to that end with a series of actions whose sole purpose and effect were to do precisely that."

[5] With a discount rate of 10 percent per year, an eight-year delay in the arrival of competition reduces the value of that competition by more than half.

[6] We are not advocating that remedy nor suggesting that the Court should make such a finding, but merely take it as an example.