

9. Access Remedies in High-Technology Antitrust Cases

Daniel L. Rubinfeld

A number of recent US mergers involving high technology have raised both horizontal and vertical antitrust issues. Purely horizontal mergers that raise antitrust concerns can often be resolved through divestiture or by the licensing of intellectual property. When there are vertical concerns, however, finding a suitable remedy can often be quite difficult. While still relatively rare, antitrust remedies requiring access to networks have been increasingly utilized by US competition authorities in vertical cases. Two prominent examples are the *AOL Time Warner* merger, in which the US Federal Trade Commission (FTC) required, as a condition for the merger to be consummated, that AOL offer several Internet Service Providers (ISPs) access to its cable broadband network; and *US v. Microsoft*, in which the US Department of Justice proposed a remedy requiring Microsoft to give Original Equipment Manufacturers (OEMs) the opportunity to replace Microsoft's Internet browser (Internet Explorer) on the desktop with a competing browser of the OEM's choice.

The two cases were procedurally distinct, the first arising from a merger, and the second from a non-merger investigation. Moreover, the cases were predicated on very different theories. The *AOL Time Warner* case and the associated remedies requested by the FTC were motivated in part by two theories of vertical foreclosure: the first relating to the cable 'conduit' and the second relating to AOL's control of content. The Microsoft remedy, on the other hand, was motivated substantially by the US Government's argument that Microsoft had engaged in a series of practices whose goal was to maintain its monopoly in the market for desktop PC operating systems. While not arising from a merger, the debate over whether access remedies were appropriate in the Microsoft case has immediate relevance to the treatment of similar remedies in merger cases.

In this chapter I will review both *AOL Time Warner* and *Microsoft*, emphasizing access remedies and the theories of liability that motivated them. In doing so, I hope to make clear that, while access remedies are likely to be

applicable only in a relatively narrow set of circumstances, such remedies can be especially appropriate in high-technology cases where the goal of restoring competition is unlikely to be achieved by other means. Nonetheless, even in such cases, it is important that the access remedy be directed towards the particulars of the antitrust injury and limited accordingly.

ACCESS REMEDIES IN VERTICAL MERGERS – AOL TIME WARNER

Overview

One particular concern that can arise in vertical mergers is the possibility that the merged firm will utilize its market power in one market to foreclose competition in related vertical markets. AOL Time Warner was not the first vertical merger to require a significant remedy. Several years earlier, the merger of AT&T and MediaOne had represented a horizontal combination of two of the largest broadband ISPs. Recognizing the potentially anticompetitive impact of such a combination, the Department of Justice (DOJ) opted for a traditional non-access remedy – a requirement that AT&T divest MediaOne's interest in one of these ISPs, Road Runner, as a condition for merger approval.¹

The merger of AOL and Time Warner involved a vertical combination of the largest Internet content provider and aggregator with one of the largest cable system operators. At the time of the proposed acquisition, AOL was perceived to offer Time Warner specialized skills in readying its proprietary content for the Internet. AOL's contribution was its unique aggregation and presentation of content that allowed for easy consumption by end-users. To complement AOL's upstream input, Time Warner offered the conduit through which such content could reach residential broadband customers at high speeds.

Similar Internet and broadband access vertical foreclosure concerns had been raised in some earlier cases. For example, in its 1994 challenge to the acquisition of Liberty Media Corporation by Tele-Communications Inc. (TCI), the DOJ required the two parties to supply their video programming on a nondiscriminatory basis to other multi-channel television providers.² Then, in November 1995, the FTC approved a consent decree with Silicon Graphics, Inc. (SGI), which allowed SGI to acquire two leading software companies if it agreed to make its two major entertainment graphics software programs compatible with the hardware workstations of a competitor.³ Finally, in 1997, the FTC approved the merger of Time Warner and Turner

Broadcasting System, Inc. (TBS), subject to an agreement that prohibited Time Warner from discriminating in price or by refusing to supply TBS programming to rival multi-channel television providers.⁴

An analysis of the proposed AOL Time Warner merger by Rubinfeld and Singer suggested that, absent suitable remedies, the merger would have created strong incentives for AOL Time Warner to discriminate against unaffiliated conduits and content providers.⁵ To combat these significant risks of discrimination, we concluded that it was appropriate for the FTC to seek conditions on the AOL Time Warner merger that would require the resulting combined company to open its cable modem platform to unaffiliated portals on nondiscriminatory terms. Similarly, it was appropriate for the Federal Communication Commission (FCC) to undertake an inquiry in September 2000 into which legal and policy approaches might best be applied to high-speed Internet service provided over various platforms.⁶

Analysis

In analyzing AOL Time Warner, the Federal Trade Commission asked whether and in what ways a vertically integrated cable firm might find it profitable to discriminate against both conduit and content providers. Consumers seeking to purchase broadband Internet service must secure access to many inputs, including: (i) broadband content (e.g., streaming video and audio, movies, video conferencing, interactive games); (ii) aggregation of broadband content and complementary services (e.g., chat rooms, instant messaging) by a broadband portal; (iii) connectivity to the Internet supplied by a broadband ISP; and (iv) high-speed transport from the home to the ISP supplied by a cable provider, telephone company, or other broadband conduit provider. To simplify, we aggregated these four inputs into two distinct antitrust markets. First, we defined the downstream market (input *iv* above) as *broadband transport service* – a market served by cable providers, telephone companies, and any other firm that provides consumers with transport from their home computer to an ISP at speeds exceeding 200 kilobits per second (Kbps). Second, we defined the upstream market (inputs *i*, *ii*, and *iii* above) as *broadband portal service* – a market served by all firms that create, package, and distribute broadband content and ancillary services, regardless of whether they are ISPs (like AOL) or pure portals (like Yahoo!). We believed that this set of market definitions accurately reflected the functional differences between the services offered by conduit providers and content aggregators.

From these market definitions follow two anticompetitive strategies that a vertically integrated firm, offering both broadband transport and portal services, could in theory profitably pursue. An integrated provider could engage in conduit discrimination – insulating its own conduit from

competition by limiting the distribution of its affiliated content and services over rival platforms. Conduit discrimination could involve a range of anticompetitive strategies, from refusing to distribute an affiliated portal over competing conduits, to making marquee content available only to customers using an affiliated conduit. AOL Time Warner could, for example, curtail its marketing of AOL's service over digital subscriber lines (DSL) while actively promoting the service provided over cable lines. An integrated provider could also engage in content discrimination – insulating its own affiliated content from competition by blocking or degrading the quality of outside content. Content discrimination could involve a range of strategies, from blocking outside content entirely, to affording affiliated content preferential caching treatment. A combined AOL Time Warner could have, for example, provided preferential caching service to its affiliated CNN-Sports Illustrated site, while providing inferior caching support to Disney's ESPN site. We analyzed the potential ability of AOL Time Warner to profitably limit its distribution of affiliated content to DSL and/or other conduit providers, and concluded that, absent further conduit-related joint ventures, conduit discrimination was less likely to be a significant problem than content discrimination.

To reach this conclusion, we first asked whether Time Warner had sufficient downstream market power to make a vertical foreclosure strategy feasible. In our study, the vertically integrated firm with market power in the downstream market is the cable firm, which as of June 2000 had an average 70 per cent share of the (downstream) residential broadband access market.⁷ We also believed that the residential broadband access market was distinct from narrowband dial-up alternatives.

At the time of the proposed merger, the extent of vertical integration between the cable conduit (with significant downstream market power) and the upstream broadband portal market was significant:

- As of August 2000, Excite@Home reported two million cable modem subscribers and 32 million cable homes passed. Excite@Home was owned by AT&T, the largest cable multi-system operator (MSO);
- As of August 2000, RoadRunner had one million cable modem subscribers.⁸ RoadRunner was owned by AOL Time Warner, the second largest cable MSO;
- The merger of AOL and Time Warner combined AOL's 27.8 million customers with Time Warner's cable conduit which passes nearly 20 per cent of all US homes.⁹

For vertical foreclosure to be an effective anticompetitive strategy for extending market power: (i) there must be scale economies in the production

of the complementary good, and (ii) there must be some customers who want only the output of the rival firm. It appears that the first condition is satisfied. Most of the production costs of interactive content, like non-interactive programming content, are up-front costs, while the marginal costs (for example, the costs of distribution) are negligible. Moreover, a broadband portal aggregates media-rich content that can be viewed by broadband users. Such a portal can either produce its own content or purchase content from independent producers. To achieve success, however, a broadband portal must offer a wide array of content that takes advantage of a high-speed Internet connection; doing so is the only way to attract customers that typically demonstrate a significant degree of loyalty to one portal. Given this linkage between access to broadband content and the success of a broadband portal, any impediment to entry in the content market will also inhibit entry into the portal market.

To the extent that the costs of producing marquee broadband content for the next generation of cable television mirror those of producing broadband content for the Internet, any economies of scale would likely translate from one medium to the other. These up-front costs are very high, particularly for a broadband portal seeking to develop content that can compete with the broadband offerings of CNN.com and other AOL Time Warner marquee content.

The second condition – the existence of a set of consumers who do not perceive unaffiliated broadband content to be a complement to the cable conduit – appears to be satisfied as well. For the roughly 30 per cent of residential broadband access customers who subscribed to DSL, unaffiliated programming from sites such as Disney.com or ESPN.com is not perceived as a complement to the cable conduit. More importantly, for all broadband access subscribers (including cable subscribers) *outside* of the discriminating firm's territory, the unaffiliated content is not seen as a complement to the discriminating firm's cable conduit. If, by denying completely or degrading the quality of broadband content from unaffiliated broadband portals, the cable conduit could induce exit in the broadband portal market, then in-region DSL customers and out-of-region broadband customers in general would experience less competition in the supply of broadband content. Hence, a vertically integrated cable firm could potentially extend its market power into the content market – both in-region for DSL customers and out-of-region for all broadband customers – by engaging in content discrimination.

A vertically integrated cable firm might also degrade the broadband features of unaffiliated content providers as a means of *preserving* its market power in the downstream conduit market in future periods. Two critical assumptions appeared to be satisfied: (i) there were significant network effects in the consumption of the complementary good, and (ii) the

unaffiliated provider had the potential to compete directly or indirectly with the vertically integrated firm in the downstream market.

Network economies are particularly strong in the broadband content market because the desirability of a particular variety of broadband content depends on the number of other consumers viewing that content (e.g., the utility associated with watching traditional video programming includes the opportunity to discuss recent episodes with friends and colleagues). We expected this same phenomenon to carry over to broadband streaming video.

With respect to the second condition, DSL providers, which compete with cable firms in the downstream market, were critically dependent on the continued development of non-cable-affiliated broadband content. To the extent that content discrimination by the cable firms could drive out unaffiliated content providers, DSL providers would become more dependent on cable firms for the supply of broadband content. Hence, we believed that a vertically integrated cable firm could undermine the future development of DSL by engaging in content discrimination.

While the necessary conditions for vertical foreclosure by vertically integrated cable firms may have been satisfied with respect to both broadband conduits and broadband content, content discrimination was of particular concern. There was not another broadband conduit with a sufficient customer base to restore a content provider's lost revenues from cable customers. Moreover, at the time of our inquiry, the future availability of alternative broadband conduits appeared to be limited. With cable's share in June 2000 being roughly 70 per cent, it appeared unlikely that a sufficient number of alternative broadband customers would be available through competing conduits to save content and portal competitors foreclosed from vertically integrated cable systems such as AOL Time Warner. In addition, because a broadband portal that cannot achieve minimum viable scale can be forced from the market, a vertically integrated cable firm might not face any significant market check on its ability to discriminate against outside content.

The analysis of content discrimination began by asking whether a vertically integrated cable company such as AOL Time Warner would have an incentive to block its customers' access to unaffiliated content. This form of discrimination would benefit the company by enhancing the position of its affiliated content providers in the national market by denying unaffiliated content providers critical operating scale and by insulating affiliated content providers from competition. Content discrimination would thus allow the company to earn extra revenues from its own portal customers, who would have fewer opportunities to interact with competing outside content.

For the vertically integrated firm, the cost of content discrimination is the potential loss in revenue from customers that demand the withheld content. To the extent that cable transport providers compete against DSL and other

broadband transport providers, the reduction in revenues from lost customers would increase. Note that content discrimination does not require a complete denial of access to outside content. Less aggressive strategies (e.g., providing unequal caching treatment for unaffiliated content providers) may inflict some loss on the downstream transport division, because some customers may still prefer to switch transport providers rather than suffer slower access to outside content. Therefore, a vertically integrated cable company *will find it profitable to engage in content discrimination if the gain from additional portal, content and advertising sales offsets the reduction in broadband access revenues resulting from lost broadband subscribers.*

Content discrimination results in lost in-region access sales, but has the potential to increase content and advertising sales across the nation. There are three sources of revenues available to the firm in general: (i) in-region access and content revenues from cable customers; (ii) in-region content revenues from non-cable customers; and (iii) out-of-region content revenues from all broadband customers.

Whether the vertically integrated provider would enjoy gains or losses on in-region cable customers depends on the relative weights of the three terms. Intuitively, the primary motivation for engaging in content discrimination is the gain in content sales outside of the vertically integrated firm's territory. As the firm's footprint increases, *ceteris paribus*, the motivation for engaging in content discrimination might weaken.¹⁰

Conduit discrimination – that is, a vertically integrated firm refusing to supply its affiliated content to rival conduits – is costly because the firm will forego the potential revenues from content distribution over foreclosed platforms. There is the opportunity, however, for countervailing benefits, because with conduit discrimination the customers will perceive the cable conduit as more valuable, which will increase the demand for the cable conduit. Clearly, *a cable broadband provider will engage in conduit discrimination if the gain from additional access revenues from broadband users offsets the loss in content revenues from narrower distribution.*

If a cable broadband transport provider controls particular content, but only has a small fraction of the national broadband transport market, that provider would have little incentive to discriminate against rival broadband transport providers *outside of its cable footprint*. The intuition is straightforward: out-of-franchise conduit discrimination would inflict a loss on the cable provider's content division, while out-of-region cable providers would be the primary beneficiaries of harm done to non-cable competitors. To capture the gains from such discrimination, the vertically integrated cable provider must have a cable footprint in which to distribute its broadband portal service, either through direct ownership or through an arrangement to share the benefits of foreclosure with other cable providers.

While it is theoretically possible to selectively discriminate in the distribution of content, it is reasonable to assume that conduit foreclosure results in lost content sales across the nation, whereas increasing conduit sales and higher conduit prices generate revenues only within-region. At the time of the proposed merger, DSL was a relatively open system (which by law must interconnect with rival ISPs), whereas rival cable systems remained relatively closed (i.e., each could reject AOL as its broadband access provider). Consequently, if a vertically integrated company such as AOL Time Warner were to engage in conduit discrimination, it would also have to forego its monthly access fee for those DSL customers that would have subscribed to AOL both inside and outside its conduit footprint.

This analysis balances the vertically integrated firm's three economic interests flowing from the three revenue streams. (i) Conduit discrimination could, in general, make it possible for the vertically integrated company to increase both its broadband access share and its access price in-region due to its now relatively richer content offering. Conduit foreclosure would have (ii) a *direct effect* on conduit profits, caused by the increase in content demand that results from the differential in content availability over cable modems and DSL; and (iii) an *indirect effect*, caused by the change in access pricing that results from an increase in demand for cable modems.

As pointed out earlier, however, conduit discrimination will lead to a loss in access and content-related revenues out-of-region. For foreclosure to be profitable, in-region revenue increases would have to outweigh these out-of-region losses. Given its limited conduit footprint at the time of the proposed acquisition, significant widespread conduit discrimination by AOL Time Warner outside of its cable franchise territory did not appear likely. However, these results are quite sensitive to the size of the cable footprint. AOL Time Warner would clearly earn higher total profits and higher profits per homes passed if the size of its distribution footprint were increased.

Remedies

While the merger raised questions about conduit discrimination, particularly if the footprint of the merged entity were to grow, the likely profitability of content discrimination was of more serious concern. Any access remedy should be predicated on a belief that there is a likelihood of significant harm to competition and/or consumers. I believed that the potential harms could have been significant for several reasons. Conduit discrimination would, if successful, lead to higher cable transport prices for AOL Time Warner customers. Further, out-of-region customers would also be worse off because they faced a diminished opportunity to purchase AOL Time Warner's content. If successful, content discrimination would have forced consumers to

pay more for broadband content (e.g., through higher prices for goods sold in ways that rely on broadband advertising), and advertisers would have been forced to pay more to reach the vertically integrated firm's captive customer base. Moreover, those cable customers who switched to an alternative conduit would be worse off because they will have been forced to choose their second-best rather than their first-best broadband alternative.

The final potential harm was the threat of retaliation by a DSL provider (or set of DSL providers) – that is, if a DSL provider were to vertically integrate into content by acquiring a large broadband portal and then denied access to all rival content from vertically integrated cable firms. This would not likely restore the loss in consumer welfare.

One can now argue with hindsight, as others did at the time, that an access remedy was not required in AOL Time Warner. I believed, however, that the costs of imposing such a remedy were modest, and the potential benefits substantial. For that reason, I felt the open access provisions that were included in the FTC consent decree were appropriate. The consent decree dealt with the *content* discrimination concerns by requiring that AOL Time Warner make EarthLink – and its associated content – available to Time Warner customers before AOL itself began offering its service in major markets.¹¹ The companies also were required to strike deals with two other competing Internet providers within ninety days of making AOL available to Time Warner subscribers in major markets.¹² The decree also required that Time Warner open its cable lines in its smaller markets to three nonaffiliated Internet providers within ninety days of making AOL's cable service available.¹³ Under a 'most favored nation' clause, Time Warner cannot strike a deal with any other Internet provider that is worse than the EarthLink agreement, or any other accord that AOL negotiates to carry its content on other cable systems.¹⁴ Moreover, the agreement put in place measures to ensure that the company did not favor its cable Internet access service over competing high-speed services utilizing DSL. This responds directly to the concern about *conduit* discrimination.¹⁵

The possibility of content discrimination with respect to instant messaging services was separately addressed in the consent decree reached with the FCC.¹⁶ AOL Time Warner was required to allow at least one instant-messaging rival to connect to its system before offering advanced instant-messaging services (such as video conferencing) over its cable network. Subsequently, it was required to sign up two additional significant and unaffiliated instant-messaging firms. When one considers AOL's instant-messaging customers as the 'content' themselves, AOL's refusal to allow instant-messaging customers from other vendors (such as MSN Messenger Service) to communicate with AOL's instant-messaging customers is a form of content discrimination – that is, a customer can only view AOL's instant-

messaging customers when using AOL instant-messaging software. Hence, the FCC's condition to allow at least one instant-messaging rival to connect to its system had the potential to undermine such discrimination.

In sum, the open access condition had the ability to undermine AOL Time Warner's ability to engage in conduit discrimination by ensuring the preservation of a robust broadband portal marketplace. Likewise, the open access condition undermined any ability that AOL Time Warner might have had to engage in content discrimination. Even if the merged company elected to block all outside content, unaffiliated portals and content providers could still reach cable customers through a competing ISP. Thus, customers seeking access to foreclosed content would not have to switch to another transport conduit suffering from a lower rate of market penetration.

I note in conclusion that the AOL Time Warner merger raises special issues with respect to vertical integration and vertical discrimination. Another cable company with little to no market power in broadband content would not have the same incentives to do so as would AOL Time Warner. To be specific, the open access regime imposed in this context would not have been appropriate in the recent acquisition of ATT broadband by Comcast. With the continuing growth of the high-technology sector, it is likely that we will see an increasing number of vertical mergers over the next decade, some of which might raise access remedy issues. From a policy perspective, each prospective merger and any associated remedies must be considered on a case-by-case basis.

VERTICAL NON-MERGER ACCESS REMEDIES – *US V. MICROSOFT*

Introduction

While not a merger case, *US v. Microsoft* raises significant vertical issues that naturally lead one to contemplate the use of access remedies. The discussion that follows complements the prior discussion of *AOL Time Warner* in demonstrating the general validity of access remedies in high-technology antitrust cases.

On 18 May 1998, the US Department of Justice, 20 individual states, and the District of Columbia filed suit against the Microsoft Corporation, claiming that Microsoft had monopolized the market for personal computer (PC) operating systems and had used that monopoly to engage in a wide range of antitrust violations.¹⁷ The case was tried in federal district court from 19 October 1998, through 24 June 1999. The court reached its findings

regarding the facts of the case on 5 November 1999 and its legal conclusions on 3 April 2000. Microsoft's appeal to the Circuit Court of Appeals for the District of Columbia was decided on 28 June 2001. The appellate court affirmed the monopolization claim, reversed other findings by the district court, and remanded the case back to the District Court to find an appropriate remedy. Following extensive settlement discussions among the various parties (the Department of Justice, the states, and Microsoft), the DOJ and Microsoft reached a settlement agreement. Nine states opted not to join the settlement, proposing a different remedy. A 32-day remedy trial was held, and, on 1 November 2002 the District Court issued a remedy ruling, which, apart from an outstanding appeal, is likely to mark the end of the four-year case.¹⁸

The heart of the *Microsoft* case was the Government's claim that Microsoft had engaged in a range of anticompetitive acts that were designed to maintain its operating system (OS) monopoly. These acts included tying the Internet Explorer browser – a form of middleware – to the operating system. The Government claimed that consumers were harmed by Microsoft's conduct, in part because consumers were paying higher prices for their operating system software, and in part because Microsoft's actions, including the integration of the browser into the operating system, had reduced innovation in the software industry. In response, Microsoft argued that it was not a monopoly; it faced significant competitive threats in a highly dynamic industry, and further, that its success should be seen as pro-competitive because consumers had benefited as the result of the distribution of high-quality, innovative software. If the Court were to impose substantial antitrust remedies, Microsoft believed that competitive incentives would be reduced, which would lead to less, rather than more, innovation.

Some background is useful to understand the genesis of the debate concerning remedies generally, and access remedies in particular. Prior to the case under discussion, on 15 July 1994, DOJ filed a complaint claiming that Microsoft's contracts with OEMs were exclusionary and anticompetitive, and that their purpose was to allow Microsoft to maintain its monopoly in the market for PC operating systems. The case did not go to trial; rather, Microsoft and the Government settled, with Microsoft signing a consent decree in which it agreed to restrict its licensing agreements along a number of dimensions. The decree was finally approved on 16 June 1995.¹⁹ An important aspect of the decree was the agreement that Microsoft could not condition or 'tie' its operating system license to the license of other operating system products. However, the decree did explicitly allow Microsoft to continue to develop 'integrated' products.

The distinction between an anticompetitive tie and pro-competitive product integration was to become a central issue in the Microsoft litigation

that followed. But there was one additional skirmish to be fought before the larger battle began. With the rapid development of the Internet came the need for software that would allow PC users to have easy Internet access. The first highly successful web browsing product came from Netscape in 1994. In a very short period of time, Netscape's 'Navigator' became the market leader, accounting for approximately 70 per cent of browser usage in 1996. While initially slow to realize the potential significance of the Internet, Microsoft was quick to redirect its efforts aggressively towards Internet browser software in 1996. A new antitrust issue arose when Microsoft began requiring OEMs to license and to install Microsoft's browser, Internet Explorer (IE), into new PCs as a condition for obtaining a license to install the Windows 95 operating system. The Government sued, claiming that Microsoft's tie between IE and the OS violated consent decree. Microsoft defended by claiming that IE and the OS were integrated products, and consequently its licensing arrangement should be seen as an exception allowable under the consent decree.

The Government was initially successful: On 11 December 1997, Judge Thomas Penfield Jackson ordered that Microsoft separate its Windows 95 OS and IE. The US Court of Appeals for the District of Columbia, however, sided with Microsoft on appeal, claiming that Microsoft had offered evidence that the combination of IE and the OS offered functionality that was not available without product 'integration'.²⁰

The Microsoft Trial

The in-court battle in the *Microsoft* case began on 18 May 1998, when the US Government, 20 of the states, and the District of Columbia brought suit against Microsoft. In its filing, DOJ alleged that Microsoft had engaged in a range of practices involving operating system licenses with OEMs, contracts with ISPs, and ties between the operating system and its IE browser, all of which restrained trade in violation of Section 1 of the Sherman Act. DOJ also alleged that Microsoft had attempted to monopolize the market for Internet browsers in violation of Section 2 of the Sherman Act. The heart of the Government's case was its allegation that Microsoft had engaged in a range of practices whose primary, if not sole, purpose was to protect and maintain its operating system monopoly.

Some additional background will be useful at this point. In the years prior to the filing of the Government's case, it became apparent to Microsoft that the Netscape Navigator browser could serve as the foundation for a software 'platform' that had the potential to compete with Microsoft's Windows 95 (and later Windows 98) operating system. Operating systems provide application programming interfaces (APIs) through which applications

interact with the operating system, and through the operating system with the computer hardware. Applications developers must write their programs to interact with a particular operating system's API. The time and expense of then 'porting' the application to a different operating system can be substantial. The term 'platform' describes a set of APIs to which applications may be written.

Because of the huge volume of Windows operating system sales and the size of the network of operating system users, a vast number of applications, including the highly successful Office suite, have been written for Windows. In order for a firm to successfully offer a competing operating system, it would, of necessity, need to offer a substantial number of applications, which would most likely include word processing and business productivity software. Because much of the software development and marketing effort is sunk, the result is the presence of a significant 'applications barrier to entry' to operating systems markets. The ability to reduce the significance of this barrier to entry is what made the Java programming language used by Netscape of particular interest to Microsoft and its competitors.

Developed and marketed by Sun Microsystems, Java was a 'cross-platform' language that offered applications programmers the opportunity to write a program once, but to have that program run on all operating systems. Cross-platform Java effectively served as a form of 'middleware', software that sits on top of an operating system while at the same time serving as the foundation for other applications. (Middleware relies on the interfaces provided by the underlying operating system while simultaneously exposing its own APIs to developers.) Netscape posed a threat to Microsoft because its browser had the potential to distribute cross-platform Java to independent software developers. If those developers chose to write to other operating systems such as IBM's OS/2 or Linux (or if they wrote directly to browser APIs associated with Internet applications), the Windows monopoly would be at risk.

With respect to the core maintenance-of-monopoly claim, the Government alleged that Microsoft had engaged in a range of practices whose purpose was to severely limit the commercial viability of the Netscape browser, and to protect Microsoft's monopoly in the PC-operating systems market. According to the Government, Microsoft's conduct, which preserved and increased barriers to entry into the PC operating system market (and which distorted competition in the market for Internet browsers), included (but was not limited to):

1. Tying IE to the operating system (in effect requiring manufacturers to acquire Microsoft's Internet browser as a condition of acquiring Microsoft's Windows operating system), thereby severely hampering

- Netscape's browser and blunting the threat that software developers, in writing for a browser platform, would create software for a non-Microsoft operating system;
2. Excluding browser competitors from the most efficient channels of distribution (OEMs and ISPs), thereby requiring competitors to use more costly and less efficient channels;
 3. Imposing agreements requiring OEMs not to remove Microsoft's browser or to substitute an alternative browser;
 4. Imposing exclusionary agreements on ISPs, requiring them to boycott or disfavor Netscape and other browsers; these included agreements not to promote, distribute, use, or pay for Netscape's browser (or to do so only on less favored terms).

Judge Jackson's Findings of Fact supported the Government's position on all significant market definition and monopoly power issues. Navigator and Java were viewed as *complements* to the operating system that could facilitate the writing of applications that were also complements.

The district court also agreed that there was a significant 'applications barrier to entry'. While Apple had 12 000 applications and OS/2 2 500, neither could compete with Microsoft, which had over 70 000 applications, one of which was its dominant business suite: Microsoft Office. The appellate court chose not to overturn Judge Jackson's findings of fact on these issues, in effect affirming the district court's finding that Microsoft had monopoly power in the operating systems market.

The district court also found in favor of the Government with respect to its core maintenance-of-monopoly Sherman Act Section 2 claim, and once again the appellate court affirmed. Judge Jackson supported the Government's proposal that Microsoft be divided into two separate entities. However, that proposal was later rejected by the appellate Court, and certain alternative conduct remedies were proposed. In order to set the stage for the remedy discussion, it is worth delving into somewhat greater detail about the tying issues raised in the case.

The Government had emphasized the fact that before Microsoft began giving away its browser for free, browsers had been distributed separately from the operating system by ISPs and by retailers; as a result, there was clear evidence that there had been demand for operating systems without browsers and for operating systems with a choice of browsers. This supported the Government's Section 1 tying claim, and also supported the Government's proposed remedy – that Microsoft allow OEMs to choose which browser to offer, or indeed, to offer no browser at all.

The Government argued that by bundling its browser with its operating system, Microsoft prevented companies from successfully entering the

browser market unless they successfully entered the operating system market. The necessity of this 'two-level' entry effectively increased the barriers to entry into the operating system market, and thereby protected Microsoft's monopoly in operating systems. The Government believed that Microsoft recognized the threat from Netscape Navigator, because it was an Internet browser capable of supporting applications that were operating-system independent. By lessening reliance on the operating system, the browser, while not performing all the traditional functions of an operating system, could have provided opportunities for competing operating systems by reducing the applications barrier to entry. In sum, the Government placed great weight on the fact that Microsoft was concerned that browsers could ultimately develop into a platform threat to its Windows operating system.

Although IE was not originally 'tied' or 'bundled' with the retail version of Windows 95 when it was first released in the summer of 1995, Microsoft did bundle IE with Windows 95 in distributing Windows 95 to OEMs, and IE was bundled with all Windows 98 operating systems that Microsoft distributed through retail or OEM channels. (In Windows 98, the browser was 'integrated', having been designed to share extensive code with the operating system.) According to the Government, Microsoft made the decision to bundle IE and Windows in one form or another even though there was demand for browsers separate from the demand for operating systems.

The Government also argued that Microsoft made its bundling decision not to achieve efficiencies, but to foreclose competition. The Government was not arguing that bundling per se was anticompetitive. Rather, the Government criticized Microsoft for not giving OEMs the option of taking Windows without the browser. This foreclosure of competition arguably had an immediate harmful effect on consumers, whose choice of browsers was restricted, and who were forced to use an unnecessarily cumbersome operating system.

With respect to OEMs, Microsoft crafted agreements which required the distribution of IE and restricted the distribution of other browsers. The agreements required OEMs that wanted to preinstall Windows 95 or Windows 98 on their machines also to preinstall Microsoft's IE. The agreements also limited the ability of OEMs to promote other browsers, or to substitute other browsers for IE. Indeed, until changes were prompted by an early 1998 stipulation between Microsoft and the DOJ, the agreements typically required that licensees not modify or delete any of the product software. This prevented OEMs from removing any part of IE from the operating system, including the visible means of user access to the IE software, such as the IE icon on the Windows desktop or the IE entry in the 'Start' menu.

Licensees were not contractually restricted from loading other browsers on the desktop. However, most OEMs preferred to load only one browser to avoid user confusion and the resulting consumer support costs, and to avoid increased testing costs. In addition, some OEMs viewed the desktop and/or disk space as scarce real estate and were generally reluctant to preinstall more than one software title in each functional category.

According to the Government, Microsoft required the promotion and distribution of IE, and restricted the promotion and distribution of other browsers by striking deals with ISPs in order to protect Microsoft's business in operating systems. After OEMs, ISPs are the largest distributors of browsers. While Microsoft's agreements with ISPs allowed them to distribute other browsers, Microsoft also imposed a series of restrictive ISP provisions that involved percentage restrictions on shipping for larger ISPs and restrictions on promotional efforts for smaller ISPs. These limitations included: (i) requirements that 75 per cent or more of the ISP software shipments include IE as the only browser, and that the ISP not ship a competing browser unless specifically requested to do so by the customer; and (ii) restrictions on the total shipments of non-Microsoft browsers by ISPs. Only a few ISPs had agreements that allowed them to distribute IE and Netscape without preference.

In its defense, Microsoft claimed that there were efficiencies associated with bundling that would be lost were Microsoft forced to separate the browser functionality from that of the operating system. Microsoft further argued that browser functionality was now an essential component of the operating system, and that separating the two products once they have been combined would be impossible. Finally, Microsoft claimed that the absence of IE would undermine the quality of the operating system, to the detriment of users. They also argued that the Government's showing that it is possible within Windows 98 to both remove the ability to browse the Web with IE and to replace IE with another browser with no appreciable decline in the quality of the Windows 98 operating system was misleading, since the Government's expert removed only the visible means of accessing the browser and not the browser functionality itself.²¹

As mentioned previously, Judge Jackson strongly supported the Government's claims that Microsoft had used anticompetitive acts to maintain its operating systems monopoly. His conclusion that the bundling of Internet Explorer with the Windows Operating System was anticompetitive serves as the underpinning for the application of an access remedy by the court. According to Judge Jackson:

By refusing to offer those OEMs who requested it a version of Windows without Web browsing software, and by preventing OEMs from removing IE – or even the

most obvious means of invoking it – prior to shipment, Microsoft forced OEMs to ignore consumer demand for a browserless version of Windows . . . Those Windows purchasers who did not want browsing software . . . had to . . . content themselves with a PC system that ran slower and provided less available memory than if the newest version of Windows came without browsing software. By taking the actions listed above . . . Microsoft forced those consumers who otherwise would have elected Navigator as their browser to either pay a substantial price (in the forms of downloading, installation, confusion, degraded system performance, and diminished memory capacity) or content themselves with IE. None of these actions had pro-competitive justifications. (Paragraph 410)²²

Remedies

The path to a remedy in *US v. Microsoft* has been a circuitous one. As mentioned previously, the appellate court made clear its distaste for a structural remedy that would break up Microsoft into two separate companies – an operating system company and an applications company. The case was remanded to the district court, where Judge Colleen Kollar Kotelly presided over settlement discussions. The US Government and nine of the 18 states that remained as plaintiffs reached a tentative settlement with Microsoft in which the company consented to a range of behavioral remedies. However, nine states and the District of Columbia opted not to join the settlement; they objected that the remedies were unlikely to be effective, and pressed for stronger remedies. The Court then held a remedies hearing in which a broad range of issues was debated.

While emphasizing Microsoft's attempts to thwart competition from Netscape, the Government continued to argue in its settlement discussions that there is a broader issue – that Microsoft engaged in anticompetitive acts whose goal was to stem competition from middleware products that threatened its operating system monopoly. The central issue at the remedy hearing was to identify an appropriate remedy that would 'restore competition'.

In its original remedy argument post-trial, the Government took the position that behavioral remedies could serve a useful temporary role, but such remedies would likely be difficult and costly to enforce, and thus would inadequately deter Microsoft's wrongful behavior. Structural remedies, on the other hand, were seen as less regulatory and therefore less subject to extensive intervention by interested parties. However, the proposed breakup would have divided the company along lines that some would argue are inefficient, and would not by itself have guaranteed increased operating system competition.

With the decision of the appellate court opposed to structural remedies, and given its own skeptical concerns, the DOJ under the Bush Administration

and the nine settling states chose to focus solely on conduct remedies. Their proposed settlement contained three components. First, it attempted to prohibit Microsoft from foreclosing the OEM channel of distribution by eliminating restrictive licensing agreements, and outlawing retaliatory measures against OEMs by Microsoft. Second, the settlement offered a series of compliance measures with the goal of enforcing the terms of the settlement agreement. Third, and most importantly, the settlement attempted to keep open the ISP distribution channel by placing limits on Microsoft's ability to discourage others from developing, promoting, or distributing non-Microsoft middleware products. The settlement included a limited access remedy; it allowed OEMs to remove the visible means of access to middleware such as IE and the Windows Media Player, but did not require Microsoft to remove the underlying computer code.

Those states opposing the settlement argued that the proposed behavioral remedy would be largely ineffective.²³ Their primary concern was that the proposed settlement did not prohibit Microsoft from illegally bundling Microsoft middleware into the Windows operating system, since it only removed the visible means of access to the Microsoft middleware. Absent such a remedy, the non-settling states argued that there was nothing to limit Microsoft from technologically tying non-browser middleware software to the OS, where such software could be a potential platform that would compete with Windows. These states believed that a stronger access remedy was appropriate; absent such a remedy, OEMs would have an inefficient incentive to support middleware that competed with Microsoft middleware. The opposing states also argued that the proposed consent decree would not effectively prohibit retaliatory conduct and restrictive licensing practices, and it would not effectively open the ISP channel of distribution. They also claimed that the proposed settlement would allow Microsoft to withhold vital technical information from developers of rival middleware. Finally, they argued that the proposed enforcement mechanism would be ineffective.

Judge Kollar Kotelly's ruling was generally supportive of the settlement agreement reached between the DOJ and Microsoft. While the Court rejected many of the more aggressive remedies proposed by the nine litigating states, the Court did offer more aggressive and potentially more effective compliance procedures that were sympathetic to issues raised by the litigating states. In a summary of its full opinion, the Court suggested that its remedy 'is carefully tailored to fit the wrong creating the occasion for the remedy . . . and is forward-looking in the parameters of relief provided . . . [and] is crafted to foster competition in the monopolized market'.²⁴

Judge Kollar Kotelly reached a number of important conclusions that served as a foundation for her remedy determination. First, she accepted the market definition and market power conclusions of the District Court and the

appellate court. She made it clear that the operating system market excluded middleware such as the browser and the media player. Moreover, the Court followed the district and appellate courts in noting that Microsoft's monopoly is naturally protected by an 'applications barrier to entry'.

The court noted the underlying maintenance of monopoly theory: that:

. . . certain kinds of software products, termed 'middleware', could reduce the 'applications barrier to entry' by serving as a platform for applications, taking over some of the platform functions provided by Windows and thereby weaken[ing] the applications barrier to entry. . . . Eventually . . . if applications were written to rely on the middleware API set, rather than the Windows API set, the applications could be made to run on alternative operating systems simply by porting the middleware. Ultimately, by writing to the middleware API set, applications developers could write applications which would run on any operating system on which the middleware was present.

The Government had initially focused their attention primarily on two middleware threats – Netscape Navigator and the Java technologies. According to Judge Kollar Kotelly, 'The district and appellate courts accepted Plaintiffs' theory of competition despite the fact that neither Navigator, Java, nor any other middleware product could [at that time], or would soon, expose enough APIs to serve as a platform for popular applications.'

The Court apparently chose a limited access remedy because it was convinced that only middleware narrowly defined could be seen as a threat to Microsoft's operating system monopoly. The Court argued that the litigating states defined middleware too expansively, so as to include many software products that did not have the potential of evolving into a true platform for other applications. It defined 'Non-Microsoft Middleware' as software that has the potential, *if ported* to such operating systems, to serve as platforms for applications.

In contrast to the broad definitions of 'Non-Microsoft Middleware' and 'Non-Microsoft Middleware Products', the Court defined 'Microsoft Middleware Products' to characterize a specific set of Microsoft software functionalities, which included those offered by Internet Explorer, Microsoft's Java Virtual Machine, Windows Media Player, Windows Messenger, and Outlook Express. (It also includes future technologies relating to browsers, e-mail client software, networked audio/video client software, and instant messaging software.)

The remedy imposed by the Court will provide some freedom to OEMs in their configuration of Microsoft's Windows operating system by lifting Microsoft's illegal license restrictions. Moreover, Microsoft will be enjoined from restricting by agreement any OEM licensee from installing an icon,

menu entry, shortcut, product, or service related to 'Non-Microsoft Middleware'. Unfortunately, the remedy does not allow OEMs to remove Microsoft Middleware; a removal which may be necessary to avoid compatibility problems with middleware installed by OEMs. The Court was apparently more concerned with permitting Microsoft to protect its product design.

The decree imposed by the Court also enjoins 'Microsoft from imposing license restrictions on the ability of OEMs to insert offers of service from IAPs [Internet Access Providers] during the initial boot sequence. The insertion of these offers was found to provide an opportunity for the promotion of alternative middleware. Microsoft's limitation on the ability of OEMs to insert such offers was found to have an anticompetitive effect in violation of antitrust law.'

The remedy will permit the automatic launch of non-Microsoft programs upon the completion of the initial boot sequence where the automatically launched program does not substitute the Windows user interface for a different interface or otherwise drastically alter Microsoft's copyrighted work. The 'ability to launch programs automatically will assist in the promotion of non-Microsoft software and middleware, resulting in an increased likelihood that a particular piece of middleware will reach its potential to serve as a multi-purpose platform for applications'.

The Court has also required Microsoft to 'alter its Windows technology to ensure that OEMs and end users may disable end-user access to various types of Windows functionality'. In addition, the Court prohibited Microsoft from designing its operating system product so as to induce reconfiguration of an OEM's or consumer's formatting of icons, shortcuts, and menu entries in an attempt to favor Microsoft's own software.

As suggested previously, the Court could have been more aggressive, but chose not to be. Judge Kollar Kotelly argued that the evidence did not indicate that the removal of software code would be beneficial from an economic perspective. The Court also found that the forced removal of software code from the Windows operating system would disrupt the industry, harming both ISVs (Independent Software Vendors) and consumers. Therefore, the Court chose to require a mild access remedy, claiming that the evidence presented to the Court indicates that 'the ability to remove end-user access to any commingled functionality would sufficiently address the anticompetitive aspect of the conduct and would prove far less disruptive to consumers and industry participants. In the case of commingling, therefore, the most appropriate remedy must place paramount significance upon addressing the exclusionary effect of the commingling, rather than the mere conduct which gives rise to the effect.'

Finally, the remedy imposed by the Court with regard to the disclosure of APIs required Microsoft to disclose those APIs, along with related technical information, which 'Microsoft Middleware' utilizes to interoperate with the Windows platform. More generally:

The Court's remedial decree will require Microsoft to make more limited disclosures of APIs, communications protocols, and related technical information in order to facilitate interoperability. The Court will prohibit Microsoft from imposing unreasonable or discriminatory license terms, but will permit Microsoft to require a reasonable royalty for the licenses necessary to exercise the rights guaranteed by the final judgment.

CONCLUDING REMARKS: THE USE OF ACCESS REMEDIES IN MERGER CASES

The prospect of imposing access remedies in antitrust is not new. Its original motivation flowed from a series of 'essential facility' cases beginning with *Terminal Railroad*, and continuing through *Otter Tail Power* and *Aspen Skiing*.²⁵ The doctrine requires that an owner of an 'essential facility' has a duty to share that facility with others; a refusal to do so violates Section 2 of the Sherman Act. While the doctrine initially applied to concerted actions by firms, in recent years it has been applied with reluctance, and typically only in cases of unilateral refusals to deal.

The present study has not previously described the essential facilities doctrine, because in neither of the two cases at issue did the court characterize its access remedy as flowing from a conclusion that either a merger (in the case of *AOL Time Warner*) or unilateral conduct (in the case of *Microsoft*) had created an essential facility. Nevertheless, reflecting about the application of the essential facilities doctrine can be helpful in one's thinking about the application of access remedies in merger cases.

Requiring access to a market over which a firm has dominance is a strong remedy that arguably should only be chosen as a remedy when a firm has violated the antitrust laws and when no less stringent remedy is required to restore competition and/or to deter anticompetitive conduct. When this principle is applied to mergers, it is important therefore to assure oneself that the access remedy is merger specific; it must be seen as a necessary cure to the anticompetitive harm likely to be created by the merger.

In both the *AOL Time Warner* merger and the *US v. Microsoft* case, such access remedies were warranted. In *AOL Time Warner*, serious issues concerning vertical foreclosure of access to broadband, a 'facility' that some might describe as essential, were raised. Moreover, there was no guarantee

that a less aggressive solution would have been effective. It is true, of course, that any anticompetitive harm that might have occurred could not have been predicted with certitude. Nevertheless, the costs of imposing a limited access remedy were worth the potential benefits.

US v. Microsoft, did not involve a merger. However, the Windows operating system was so dominant that it could comfortably be described by some as essential. It is not surprising, therefore, that the settlement between the DOJ and Microsoft, largely upheld by the Court, included relatively mild access remedies. Implicit in the Court's opinion was the view that competition could be restored without requiring substantial access to Microsoft's operating system monopoly.

There is another important difference between *AOL Time Warner* and *Microsoft*. In contrast to the prospective issues raised by the merger case, significant violations of the Sherman Act had already occurred in *US v. Microsoft*. In this author's view, it is unclear whether the modest access remedies imposed by the consent decree will sufficiently restrain Microsoft from harming competitive middleware products that threaten its operating system monopoly. Only the future will tell for certain whether more aggressive access remedies would have been appropriate.

NOTES

1. See Plaintiff's Competitive Impact Statement at 13–15, *United States v. AT&T Corp.*, no. 1:00CV00176 (D.D.C. 25 May 2000) (competitive impact statement), explaining that the proposed merger 'would violate Section 7 of the Clayton Act, 15 USC §18, by lessening competition in the nationwide market for the aggregation, promotion, and distribution of residential broadband content'.
2. See *United States v. Tele-Communications Inc.*, 1996–2 Trade Reg. Rep. (CCH) §71, 496.
3. Silicon Graphics, Inc.: Proposed Consent Agreement, 60 Federal Register 35,032 (5 July 1995).
4. *In re Time Warner, Inc.*, et. al., 123 F.T.C. 171 (1997).
5. (2001), 'Open Access to Broadband Networks: A Case Study of the *AOL/Time Warner Merger*', *Berkeley High Technology Law Journal*, 16, 631–75.
6. See *In re Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, GN Dkt. no. 00–185, released 28 September 2000, at §14.
7. *High-Speed Services for Internet Services – Subscriberhip as of June 30, 2000*, FCC News (released 31 October 2000), at Table 3.
8. RoadRunner, *RoadRunner Hits A Million* (press release), 23 August 2000.
9. Federal Trade Commission's Analysis of Proposed Consent Order to Aid Public Comment, *In the Matter of America Online, Inc., and Time Warner Inc.*, File no. 001 0105 Docket no. C–3989.
10. This analysis omits several important considerations that could cause content discrimination to be more profitable. First, with network effects, to the extent that foreclosed competitors exit the market, the vertically integrated firm is less likely to lose customers to a competing conduit because switching conduits will no longer afford customers access to foreclosed content. Second, a strategy of partial foreclosure, one that

increased the cost of accessing rival content on its cable systems, could be substantially more profitable. Such a strategy, if successful, would have had the potential to choke off the supply of rival content generally, and cause customers to shift towards, rather than away from, cable transport as their preferred platform.

11. *In re Am. Online, Inc. and Time Warner Inc.*, before Fed. Trade Comm'n, no. C–3989, §II.A.1 (decision and order released 14 December 2000).
12. *Id.* at §II.A.2.
13. *Id.* at §II.B.1.
14. See *id.* at §II.C.1.
15. See *id.* at §IV.A.
16. The order also stipulates that 'the company cannot discriminate against nonaffiliated Internet providers in the technical quality of service. The FCC requires that AOL bargain in "good faith" with these Internet providers.' *Id.*
17. *US v. Microsoft*, Civil Action no. 98–1232. One state settled with Microsoft before the case went to trial, and another withdrew after the District Court's opinion was filed.
18. *State of New York v. Microsoft Corporation*, Final Decree, Civil Action 98–1233 (CKK), D.D.C. 2002. This review relies substantially on two more detailed descriptions of the Microsoft case. See Fisher, Franklin M. and Daniel L. Rubinfeld (Spring 2001), 'US v. Microsoft – An Economic Analysis', *The Antitrust Bulletin*, 1–69, and Rubinfeld, Daniel L. (2003), 'Maintenance of Monopoly: *US v. Microsoft*', in Kwoka, J. and L. White (eds), *The Antitrust Revolution*, Oxford University Press.
19. *US v. Microsoft Corporation*, 1995–2 Trade Case, ¶71,096 (D.D.C. 1995).
20. *US v. Microsoft Corp.*, 147 F. 3d 935 (D.C. Cir. 1998).
21. With respect to its ISP agreements, Microsoft took the position that it was justified in competing aggressively for the distribution of its browser. Its success with AOL, for example, was due to its superior quality product and the desirable competitive terms that it offered. Microsoft stressed that its browser came in distinct 'modules', which allowed AOL more easily to integrate the IE 'technologies' into its own proprietary software. Finally, Microsoft argued that Netscape did not offer the same support as Microsoft, refusing, for example, to allow AOL to manage its popular web portal.
22. Concerning consumer harm, Judge Jackson stated that '[m]any of the tactics that Microsoft has employed have also harmed consumers indirectly by unjustifiably distorting competition. The actions that Microsoft took against Navigator hobbled a form of innovation that had shown the potential to depress the applications barrier to entry sufficiently to enable other firms to compete effectively against Microsoft in the market for Intel-compatible PC operating systems. That competition would have conduced to consumer choice and nurtured innovation. . . . It is clear . . . that Microsoft has retarded, and perhaps altogether extinguished, the process by which . . . middleware technologies could have facilitated the introduction of competition into an important market' (Paragraph 411).
23. For a discussion of the economic case for stronger remedies, see *State of New York v. Microsoft*, Civil Action no. 98–1233, 'Direct Testimony of Professor Carl Shapiro'.
24. *State of New York v. Microsoft*, Civil Action no. 98–1233 (CKK), Executive Summary, 1 November 2002.
25. *United States v. Terminal R.R. Assn.*, 224 US 383, 32 S. Ct. 507 (1912), *Otter Tail Power Co. v. United States*, 410 US 366, 93 S. Ct. 1022 (1973), and *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 US 585, 105 S. Ct. 2847 (1985).