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ECONOMIC POLICY ISSUES REGARDING MICROSOFT[†]

The *IBM* and *Microsoft* Cases: What's the Difference?

By FRANKLIN M. FISHER*

The *Microsoft* case¹ has attracted more attention than perhaps any antitrust case in history—far more than the mammoth *IBM* case of the 1970's,² with which it is sometimes compared. I was the chief economics witness for *IBM* in *United States v. IBM* and the chief economics witness for the United States in *United States v. Microsoft*.

I did not “switch sides”.³ Even though both cases involved “bundling” and charges of “monopoly leveraging,” the facts were different,⁴ and the principles of economic analysis led to different outcomes. It is useful to state two such principles:

- (i) An anticompetitive act by a single firm is one that is not profit-maximizing without the monopoly rents that it creates or maintains but is profit-maximizing with those rents included.

- (ii) Monopoly “leveraging” requires monopoly power to leverage.

I. The *IBM* Case

A. *Bundling Software and Services with Hardware*

Until 1968, *IBM* offered systems support and software with its computer systems at no separately stated charge.⁵ The government alleged that this bundling forced other hardware producers also to bundle, thus raising barriers to entry into the supposedly monopolized computer-systems market.

This was quite untrue. There flowered a large independent software industry, making it easy for hardware manufacturers to acquire the necessary software to produce a bundle.

Further, *IBM*'s bundling in the relatively early days of the computer industry was a response to consumer demand, providing a guarantee that computers would function and solve users' problems. That was highly desirable in a period in which computers were great, unfamiliar, frightening beasts.⁶ When a community of users arose that did not need the bundle, bundling diminished, starting in 1968.

Had consumers not wanted the bundle, *IBM*'s bundling would have made entry easier, not harder. Other hardware manufacturers could have offered hardware without the bundle to customers who wished to dispense with the latter. This would have made their products more attractive relative to those of *IBM*. Instead, most manufacturers offered their own

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¹ *United States of America v. Microsoft Corporation*, Civil Action No. 98-1232 TPJ (D.C.).

² *United States v. International Business Machines Corporation*, Docket number 69 Civ. DNE (S.D. NY).

³ During the case, *Microsoft* more than once unsuccessfully tried to introduce evidence of my supposed “contradictions.” Significantly, they never asked me about them in nine days of cross-examination.

⁴ So also, thank heaven, were the judicial management of the case and the level of competence displayed by the Antitrust Division's economists.

⁵ *IBM* also bundled services and hardware in a different area, requiring lessees of its computers to take maintenance from it. I shall not discuss this here, save to observe that *IBM* owned the computers in question and hence had a direct interest in how they were maintained.

⁶ And when property rights in software were unclear.

bundle. When IBM unbundled, Honeywell ran advertisements proclaiming “the same old bundle of joy.”

B. *Bundling Formerly Separate Hardware Components Together*

Until the early 1970's, much of the control circuitry for disk drives was located in a separate box (the “controller”). Such boxes became obsolete when IBM introduced two control devices, in connection with the announcement of the System/370 line. These devices placed the control circuitry inside the central processor. The government contended that these introductions were anticompetitive acts designed to extend or preserve IBM's power over the supposed “market” for disk drives attachable to IBM systems and to eliminate competition in control circuitry.

The allegation as to memory was similar. In the mid-1970's, IBM introduced new memory devices, far smaller than the old. It then offered its new central processors with a substantial amount of memory included. (Additional memory could be purchased separately.) The government claimed that this was an attempt to stifle competition in the supposed “market” for memory used with IBM systems.

Each of these acts involved an obvious innovation. Light and electrical signals travel only about three inches (7.62 cm) in a nanosecond, making the minimization of travel distance important in computer design. This made the placing of control circuitry and memory inside the CPU a major goal. The new devices were cheaper and faster than the ones they replaced.

If the provision of technological improvement were dispositive, however, then anticompetitive bundling, no matter how large its effects, could be justified as being accompanied by consumer benefits from innovation, no matter how small. Moreover, companies would be encouraged to design their products so as to make a bundle difficult to take apart (as Microsoft did with its browser and Windows 98). Hence, one must still weigh the advantages produced by the innovation against any anticompetitive effects.

This is no problem in the case of IBM. First, the disk-control devices did not change any connections between existing CPU's and exist-

ing disk drives. Second, anyone who wished to attach to the new CPU's in the old way could still do so. Third, competing manufacturers of disk drives could and soon did attach their products to the new control devices. Memory manufacturers continued to have a sizable market in additional memory.

Most important, manufacturers of both disk drives and memory could sell to customers using non-IBM processors, and in case anyone has forgotten, there were a great many of these. Some such processors were part of full computer systems; some, such as those made by the Amdahl Corporation, were plug-compatible replacements for IBM CPU's.

Therein lies the most powerful answer to the claim that IBM's bundling was anticompetitive. IBM was (and is) engaged in competition with many other firms both in “boxes” and in complete systems. Had consumers not found the bundled offering of the new products sufficiently attractive, there would have been an opportunity for (rather than a foreclosure of) IBM's competitors.

Monopoly leveraging through bundling requires monopoly power. It can serve to preserve that power, but so long as entry is not difficult for other reasons, bundling that is undesired by a significant group of customers only creates an opportunity for rivals.

II. *The Microsoft Case*

Application software calls on application programming interfaces (API's) which permit the application to use the services of an underlying software platform, typically (but not always) an operating system. In general, application programs written for a given operating system will not run on other operating systems.

The production of software involves considerable economies of scale. Most of the expense is fixed cost: the cost of writing and debugging the software itself. Writers of applications programs thus have an incentive to write for operating systems with a very large number of users. Operating systems themselves are subject to “network effects.” Users naturally wish to have an operating system that has a large number of applications written for it. As a result, the more users of a given operating system there are, the

more applications will be written for it. The more applications are written for a given operating system, the more users there will be.

Microsoft was the beneficiary of this positive feedback phenomenon (the “applications barrier to entry”). At least since the triumph of Windows 95, it has had roughly 90 percent of the operating systems installed on Intel x86 chip personal computers (PC’s).

As this suggests, Microsoft has monopoly power in such operating systems. Most operating systems are sold through licensing PC manufacturers (called “OEM’s” for “original equipment manufacturers”). There is ample evidence from OEM’s that they have no choice but to ship their computers with Windows. Given the positive feedback described above, no alternate operating system vendor has been or will be able to gain more than a niche.

This does not mean, however, that there can never be a threat to Microsoft’s monopoly. In recent years, there have been two major potential threats.

The first such threat was the innovation of the browser. Netscape’s Navigator was an instant success, being acquired by users to enable them efficiently to browse and use the worldwide web. It was a major piece of applications software.

Browsers have another aspect. They provide some of their own API’s to enable software developers to make efficient use of internet resources. Thus, an extremely popular browser could itself be the beneficiary of the feedback effects already described. If enough software developers were to write applications directly to the browser API’s, and computing were to become sufficiently internet-based, users and OEM’s might become indifferent as to which operating system underlay the browser.

This threat to Microsoft was enhanced by the creation of the Java programming system by Sun Microsystems. In principle, programs that are written in Java will run on any operating system. If successful, application programmers writing in Java would become indifferent as to the underlying operating system. Were Java to be successful, the applications barrier to entry enjoyed by Microsoft would simply disappear. Netscape actively promoted Java.

Microsoft took steps to rid itself of these threats as part of a pattern of vigorously at-

tempting to suppress any innovation that offered even a partial alternative platform. In the case of an attempt by Apple, for example, Microsoft threatened to withhold Macintosh development for Microsoft Office and threatened to put very large development teams to work in the audio-video area in which Microsoft felt challenged, “even if,” as the Microsoft representative put it, such action made “no business sense.” Microsoft used similar threats to get Apple to support Internet Explorer as its default choice. Actions that “make no business sense” except for the monopoly rents obtained or preserved through their destructive effect on competition are predatory and anticompetitive.

Microsoft also took action directly against Java, while appearing to embrace it. Microsoft’s version of Java offered programmers the ability to call on Windows facilities directly. That could be very useful, but the programs thus created would not run on operating systems other than Windows. This was also true of programs written using Microsoft’s developer aids for Java, unless the developer was very careful and informed.

Microsoft was internally clear as to what these actions would do. Application programmers would naturally write first for Windows. If many or most of them swallowed Microsoft’s bait, then the threat that Java represented to the barriers to entry sustaining the monopoly would dissipate. (One document speaks of containing Java by promoting “polluted Java.”)

The actions directed at Netscape and its browser aroused the most attention, however. First in later releases of Windows 95 and then much more tightly in Windows 98, Microsoft bundled its own browser, Internet Explorer (IE), with its operating system. Customers obtained IE at no separately stated charge; indeed, most customers could not obtain Windows 98 without also being forced to take IE.

Microsoft attempted to justify these practices with two technological claims. The first was that the so-called “integration” of IE with Windows 98 provides a benefit for consumers, permitting them to have a single browsing experience whether browsing the worldwide web or looking for files on their own hard disks. The second is that IE could not be removed from Windows 98 without damaging the workings of the operating system.

Neither of these claims had much content. First, it is not clear that the "common browsing experience" was actually desired by consumers. Further, Microsoft witnesses testified that the combination of Windows 95 and IE 4 provided the same benefits as the integration of IE into Windows 98. The nonremoval claim could be made only because of Microsoft's own unnecessarily restrictive design choice.

It is worth noting that Microsoft pressured Apple into making the version of IE for the Mac operating system its default browser. No claim of technical improvement for Windows can explain that.

Microsoft claimed that bundling the browser was a normal pro-competitive act because the demand for browsers helps to sell Windows. In that case, it is even stranger that Microsoft should have pushed Apple into adopting IE. Moreover, even if true, such a phenomenon merely suggests the profitability to Microsoft of having *some* browser available. There is no reason that the available browser had to be IE. On this line of argument, Microsoft should have welcomed sales of any browser.

That Microsoft definitely did not do. Having ensured that IE would appear on nearly every new computer purchased, it set out to tie up the other most important distribution channel for browsers. This is the provision of browsers by internet service providers (ISP's) including on-line services (OLS's), of which the most important is America On Line (AOL). Here Microsoft went beyond bundling, beyond offering IE at no separately stated charge. It actually paid to have its browser adopted, despite the fact that the browser was a "no-revenue product." In the case of AOL, Microsoft paid cash and offered valuable space on the Windows desktop despite the fact that this would damage its own on-line service, MSN.

Microsoft also signed restrictive contracts with internet content providers (ICP's) such as the Walt Disney Company. In exchange for prominent appearance on the desktop, such companies had to agree that they would not pay Netscape any consideration for similar placement on its web site—a dead giveaway as to Microsoft's anticompetitive purpose.

Of course, as Microsoft repeatedly pointed out, there were other channels of distribution open to Netscape, such as downloading or voluminous mailings of Navigator CD's. But the latter method was costly, and the former inconvenient. Moreover, the fact that the consumer's computer already has a perfectly capable browser loaded onto it very greatly reduces the incentive to install a second one.

Microsoft's actions were not simply profit-maximizing without the monopoly rents to be preserved by removing the threat to the applications barrier to entry. There is not a shred of contemporaneous evidence that Microsoft was interested in any ancillary revenues associated with browsers. Further, operating systems and browsers are not bought or used in fixed proportions. Microsoft was not merely accomplishing something which it could have done by charging a high price for Windows.

Microsoft took these actions in a deliberate attempt to protect its monopoly power in platforms. The growth of someone else's browser, particularly in conjunction with Java, would have threatened that power by making it attractive for application writers to connect with browser or Java API's. With Microsoft not controlling those API's, the importance of Windows and the barrier to entry that preserved the monopoly might be lessened or disappear.

IBM's bundling, if undesired by customers, provided an opportunity for IBM's competitors, who could offer computers without the bundled products or services. When Microsoft bundled its browser, it did not risk the entry of competing operating systems that are attractive because they do not offer a bundled browser. No such entry could be significant because of the applications barrier to entry. On the contrary, by bundling its browser and by its other acts, Microsoft was removing a threat that entry would later arise.

Simply put, IBM had no monopoly to protect, and its bundling actions could not have produced one. By contrast, Microsoft had monopoly power, and its bundling and related actions "made no business sense" save for the protection of that power.