

CEI ON POINT

The Competitive Enterprise Institute

1001 Connecticut Avenue NW • Suite 1250 • Washington, D.C. 20036 • (202) 331-1010 • <http://www.cei.org>

Committed to Advancing the Principles of Free Enterprise and Limited Government

January 19, 2000

No. 56

Windows and the “Applications Barrier to Entry”: Fact or Fantasy?

By Stan Liebowitz¹

Very soon, U.S. District Judge Thomas Penfield Jackson is expected to issue his conclusions of law in the Microsoft case -- his formal opinion on whether or not Microsoft violated the antitrust laws. The “guilty” charge certain to be hurled at Microsoft during this crucial phase of the trial will have been derived from troubling and flawed principles embraced earlier by Jackson in his October 1999 findings of fact. These findings of fact, in which Judge Jackson declared Microsoft to be a monopolist, in turn rely on a serious economic fiction.

That fiction is an “intractable chicken-and-egg problem,” otherwise referred to by the Judge as the “applications barrier to entry.” According to the findings of fact, the applications barrier to entry secures for the Windows operating system a monopoly that it may not otherwise be able to maintain. Such lock-in theories hold that a dominant product might remain entrenched in the face of a superior rival product because the rival cannot coordinate market participants.

The Lock-In Story. The lock-in story goes like this: Assume that Betamax videocassette recorders are superior to VHS videocassette recorders, and that every single one of us would prefer using Betamax. VHS, however, is already well established, and most movies are recorded in the VHS format. Clearly, if everyone switched to Beta, movies would then be released in Beta format. But, it is possible that each individual believes that others will not, in unison, purchase Beta, fostering the conclusion that one must purchase VHS in order to watch rented movies. Since everyone, by assumption, prefers Beta, this would be a bad result, since all are “locked in” to an inferior product.

Of course, if someone could coordinate these consumers to help them make the switch, the problem would be overcome. These coordinators are known as entrepreneurs in our economy, but they are always left out of lock-in stories.

Lock-in out of step with facts. Judge Jackson’s version of the software lock-in story is as follows. Even if everyone preferred, say, the OS/2 operating system instead of Microsoft’s Windows, we all (including application programmers) might nonetheless believe that everyone else is going to stick with Windows, and so we would (reluctantly) choose Windows to gain access to the large set of

¹ Stan Liebowitz (liebowitz@utdallas.edu) is professor of managerial economics at the University of Texas at Dallas and co-author with Steve Margolis of the 1999 book *Winners, Losers, and Microsoft: Competition and Antitrust in High Technology*, published by the Independent Institute in Oakland, California.

applications that it supports. This is the dreaded "applications barrier to entry," the "unfair" leg up enjoyed by Windows. The judge believes that this barrier is the source of Microsoft's monopoly power.²

Actual history more prosaic. Predictably, the judge suggests that the failure of OS/2 and the Macintosh to dislodge Windows is evidence for the applications barrier to entry. But if the judge had examined the actual history of these platforms, however, he might have found the real reasons that they were not able to overcome Windows -- prosaic things such as product quality and price.³

OS/2 -- which started out with plenty of developers -- was more expensive than Windows, required beefier computers, routinely crashed during installation and didn't work with many printers and video cards.⁴ Ignored in the Judge's Macintosh fantasy was its high price, Apple's unwillingness to port its operating system to non-Apple hardware, and its general disdain for providing backward compatibility. The failure of these products to become the dominant operating system had nothing to do with coordination failures; failures stemmed from marketing and strategic execution blunders.

Nor did Judge Jackson explain how Microsoft itself was able to overcome the applications barrier when it introduced Windows. After all, programmers wouldn't have written programs for Windows without Windows users, and there would have been no users without programs. Yet Microsoft did overcome this seemingly impenetrable barrier.⁵

One might suppose that the same factors that allowed Microsoft's operating system to flourish in a hostile marketplace could work on behalf of a superior alternative, but the judge insists that no new entrant could overcome the applications barrier to entry. Along with the failures of OS/2 and Macintosh, the judge pointed to certain of Microsoft's actions that in ordinary circumstances are thought beyond reproach. When Microsoft improves its operating system and supports third party software developers, normally considered to be commendable actions, the judge interprets these actions as wicked attempts to strengthen the applications barrier to entry. Viewing the world through the lens of economic models populated by helpless producers and hapless consumers, inertia reigns, market errors are common, and monopolists remain forever entrenched.

² His definition of the market leaves out all competitors to Windows. The Macintosh, for example, is not really a substitute for Windows according to the Judge. Note that this implies that Windows must also not be a substitute for the Macintosh, and that therefore the Macintosh is a monopoly in its market, as he defines it.

³ See Stan Liebowitz, "A Defective Product: Consumer Groups' Study of Microsoft In Need of Recall," *CEI OnPoint* No. 25, February 9, 1999.

⁴ Moreover, OS/2's business plan apparently sought to pursue and establish the very type of "monopoly" that Microsoft stands accused of pursuing. Judge Jackson seems unaware of a rather interesting tidbit in the history of OS/2 with a rather juicy irony regarding monopoly and barriers to entry. In its original incarnation, there were to be two versions of OS/2, a regular and lite version. The regular version would only run on machines with the IBM Microchannel architecture, a proprietary standard limited to IBM brand PCs. The lite version, missing networking and communication features, was intended to run on other computers. If successful, this would have moved all business users to IBM PCs and allowed other computer manufacturers to merely share in the home/small business market. The judge could have learned a thing or two about attempted monopolization if he had investigated this story. He might also have viewed the victory of Windows in a different light had he investigated more deeply.

⁵ But it was not an immediate success. Windows 1.0 and Windows 2.0 were notable flops. It wasn't until Windows 3.0, almost five years after the first incarnation, that Windows "steamrolled" to a large market share. The reason? Version 3.0 was the first version of Windows that worked well.

Can cars exist? The problem with the assorted lock-in or chicken-and-egg theories used to vilify Microsoft and other companies is the flawed belief that the market cannot handle coordination problems.

The problem goes far beyond computer technology. The logic of lock-in implies that cars could not exist, since there wouldn't be any gas stations without cars and no cars without gas stations. Similarly, consumers couldn't have moved from vinyl records to CDs, eight-tracks to cassettes, mail to fax, or abandoned a host of other "locked-in" technologies.

Each one of these cases suffers, in principle, from Judge Jackson's "intractable 'chicken-and-egg problem,'" yet in each of these markets the logical conundrum was overcome. Most of us know not to fall prey to such apparent brain-teasers when our experience is to the contrary. Otherwise, we might well have to give up such activities as travel, since it might appear that we can never reach our destination because we would have to go through an infinite series to get there.⁶

Misplaced conundrums. We would do well to favor our experience in the marketplace over misplaced conundrums. There is not a whit of evidence to support the claimed coordination failures in markets. Stephen Margolis and I have spent more than a decade investigating claimed instances of markets that were supposedly beset by just this type of coordination problem, and have recently written a book on the subject.⁷ Our conclusion, based on a mountain of evidence, is that the chicken-and-egg paradox does not provide a foundation for concerns that markets might not function properly.

There is not a single known example where these coordination problems were not overcome — where superior entrants were not able to vanquish inferior incumbents. It certainly wasn't true for typewriter keyboards or videorecorders, the two most often cited supposed instances of lock-in (at least by academics). These turned out to be just poorly researched fables. Interestingly, we found that market leaders in software markets were likely to have their leads more quickly supplanted by superior challengers than was the case in other markets. This is just the opposite of Judge Jackson's unsupported claims regarding insurmountable applications entry barriers.

Entrepreneurs key to ending lock-in. Entrepreneurs, so neglected in lock-in stories, turn out to be pretty good at coordinating markets. They do it, of course, for fame and fortune. A superior operating system that might replace Windows would certainly provide a rich payoff, as the owners of Linux (which has only faint hopes in those directions) have discovered. There seems no reason to think that entrepreneurs wouldn't be up to the task of toppling sub-optimal technologies in software markets, particularly given the enormous amounts of money flowing through the IPO coffers these days. (A dramatic example of a new business model is a new company called myWebOS.com that offers an entirely Web-based operating system, plus office suite, file storage and even free long distance phone calls.)

The applications barrier to entry is merely a beguiling chimera that has cast its spell on Judge Jackson. Although it can transfix the mind, it is routinely overcome in the marketplace. When and if a better operating system comes along all the evidence indicates that it will get itself established in the marketplace. Windows has not been dislodged as yet only because a superior alternative has not made its

⁶ This is the old paradox that says that you get one half, then one quarter, then one eighth of the way to the destination. Since this is a never-ending sequence it might seem that you can never reach your destination. Instead of despairing of this situation, however, most of us realize that we do reach our destinations and ignore the apparent paradox.

⁷ *Winners, Losers, & Microsoft: Antitrust and Competition in High Technology*, 1999, Independent Institute.

presence felt. Perhaps it will be Linux. Maybe it will be some currently unknown system. Or maybe windows will remain until the next computing revolution overtakes them all.