I strongly support the antitrust laws and believe that the general principles established by our antitrust laws are of great and abiding importance toward ordering a competitive economy.

One of the most important developments of modern times is globalization—the increase in international competitiveness. An increase in competitiveness—in competition—of course, is the objective of antitrust law. Thus, we might think of the increase in global competitiveness as an alternative to antitrust enforcement. The more general the competition and the more serious the global competition, the less we need to rely on antitrust prosecution to maintain competitive conditions in American markets. As a consequence, our antitrust policies should focus, as Chairman Pitofsky mentioned, more on securing and maintaining ease of entry into American markets than on refining our economic analysis of the potential effects of very specific industrial practices—and surely more than on fine-tuning industrial structure.

Perhaps more importantly, in many modern contexts we must think about antitrust enforcement in new and different ways. We must adapt our interpretation of the antitrust laws to novel industrial situations and to modern industries that operate much differently from the industries that our antitrust laws have regulated in the past. We must recognize that high tech industries have a much different base and operate differently than the manufacturing industries with which we have had the predominant experience in antitrust enforcement over the last one hundred years. Compare, for example, a prototypical

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manufacturing industry such as steel to a modern information-based industry such as computer software. At its creation in the early years of this century, U.S. Steel had a market share of roughly ninety percent.\(^3\) Competition, as we would expect, eroded that market share, but did so very slowly, at a rate of roughly ten percent per decade.\(^4\) Therefore, fifty years later, even U.S. Steel still remained by far the dominant firm in the American steel industry. Quite in contrast, in the computer software industry in the years since 1980, a period of less than two decades, we have seen three separate instances of industrial dominance—IBM, Apple, and now Microsoft.\(^5\) Moreover, these revolutions have been complete, not partial, as in the case of U.S. Steel; that is, there remain very few people who still use DOS or Macintosh exclusively. They are period pieces and of little market significance in the modern software market.

Because market power in high tech industries stems from a different source than market power in manufacturing, we must address antitrust enforcement differently. Market power in manufacturing derives from the physical possession of property: from the possession of a dominant set of plants such as by U.S. Steel, or from the possession of dominant natural resources such as by Alcoa.\(^6\) These physical resources are not easily duplicated so that it takes a substantial period of time—many decades—to develop competitive alternatives. In contrast, market power in high tech industries derives from information, or more importantly, from the configuration of information through a network.\(^7\) It is not simply that idea A is superior to idea B, but that membership in network A provides a broader set of advantages (for the moment) than membership in network B.

Computer software is appropriately viewed as a language. It is not surprising that a language such as Windows commands a very high market share. There are many benefits from mutual communication in a language. The benefits of language do not derive from the individual efficiency of any one component of

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6. See United States v. Aluminum Co. of America, 148 F.2d 1448 (2d Cir. 1945).
the language. Thus, we are not going to understand the sources of the market share attending a language by asking, as we do in other antitrust contexts, whether one component of that language, such as Internet Explorer, is more efficient than or superior to an alternative potential component, such as Netscape's Navigator.

There is nothing surprising in this analysis. As a language, English commands a very high market share here in the United States and, increasingly, around the world. That dominant market share is not the result, surely, of the individual efficiency of any single component of the English language. That is, we speak English not because English verbs or nouns are more efficient in any sense than French or Spanish verbs or nouns. We speak English because we belong to and wish to continue membership in the English language network. Citizens of the world are increasingly learning to communicate in English, not because they admire England or the United States—in many cases, the reverse—but because they, too, appreciate the mutual value that comes from participation in the English language network; a value, I might add, that has been significantly enhanced by software innovations such as Windows.

The understanding of the implications of networks and the mutual benefit that comes from participation in a network is extremely important for the application of antitrust law to the software and other intellectual property industries. Toward this end, we must keep in mind the most central goal of antitrust law which is to provide benefit to consumers. There has been very distinguished economic testimony presented in the Microsoft case (perhaps supported by Chairman Pitofsky) claiming that the network effect of Windows constitutes a barrier to entry. I believe that this is a fundamental misconception. The network effect of Windows, or of any other language, is an efficiency, not a barrier. The simple question proving the point is to ask whether consumers would be better or worse off if the network to which they belong were broken up.

Chairman Pitofsky's notion that we have to weigh the benefits of the efficiency of the network against the barrier to entry

8. See id. at 500.
10. See Lemley & McGowen, supra note 7, at 501.
effects cannot quite be right.\textsuperscript{11} That is, the efficiency and the barrier are the same thing. Take his very peculiar example in which prices decline by five percent because of the efficiency of the network, but rise fifty percent because of the barrier to entry.\textsuperscript{12} The example is peculiar because it is not obvious why anyone would want to become or remain a member of such a network. A person or firm joins a network because the net benefit—cost savings less price—is greater than some current alternative. In the Pitofsky example, there is no net benefit—there is a forty-five percent cost disadvantage—which is not a barrier to entry but an encouragement to entry or to substitution. In the example, there is a forty-five percent window for alternative competition from another network (or even the previous status quo) to reclaim the market. Put differently, the firm that created the network has a forty-five percent cost disadvantage to a competing network or to the status quo. That is not appropriately viewed as a barrier to entry.

In contrast, the network effect that repels entry is the one in which efficiency is so great that it cannot be easily duplicated. Reverse the Pitofsky example. Imagine that costs decline fifty percent because of the efficiency of the network but prices rise five percent because of the superior competitive position of the provider of the network. That forty-five percent advantage is what poses difficulty to competitors. But it is not a barrier; it is an advantage.

Again, we must ask the most basic question in antitrust. Are consumers going to be better or worse off from breaking up or impairing in some way the effects of the network? The call for mandated licensing in various high-tech cases seems to me to confuse this point. The movement to unbundle now-integrated aspects of a language misses the point. Both proposed policies, in essence, serve to break up the network and destroy the efficiency. Consumers do not benefit from such policies; they are harmed.

Other concepts loosely thrown around in these cases are of a similar nature, such as “establishing a level playing field” or “maximizing access.” Irwin Steltzer alluded to the problems of denying access and ensuring diverse options.\textsuperscript{13} To my mind,

\textsuperscript{11} See Pitofsky, supra note 2.
\textsuperscript{12} See id. at 139.
\textsuperscript{13} See Stelzer, supra note 1.
those concepts are basically misapplied in the context of a language. That is, it would not make sense in order to level the playing field or to maximize access as between English and Spanish to mandate that members of the English language network use Spanish verbs. Similarly, it makes no sense to require, when we boot up a thought, that both the English and the Spanish equivalent appear on our intellectual first screen. As anyone who is even partially bilingual knows, if one wants to be truly effective in communication, one needs to think and talk in one language at a time.

That is not to say that the antitrust laws are irrelevant in the context of networks or of modern intellectual property more generally. For example, if the Microsoft litigation results in an order requiring Microsoft to quit threatening other firms and to quit using belligerent language, little harm will result. For that matter, if the court enters an order requiring Netscape's Navigator to be added to Windows's first screen along with Internet Explorer, equally little harm will result. Of course, considering such an order and remedy suggests the basic incoherence of the Microsoft prosecution. What is the significance of the browser? Why Navigator among browsers? Why not other applications? Where does it stop? If we transform Judge Jackson for the computer software industry into a Judge Harold Green who thwarted developments in telephony for over a decade, then there will be serious harm to consumers and to the world.

There is no question with regard to information industries that we are in a new age, and it is an age of endless possibilities. We must adapt our understanding of the antitrust laws in order to make certain that the laws advance these possibilities rather than retard them.

15. See Lemley & McGowen, supra note 7, at 507.