

FTC/DOJ Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy

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Microsoft commends the Federal Trade Commission and the Department of Justice for their efforts to develop a better public understanding of the intersection between intellectual property (IP) and competition law and policy. We anticipate that the testimony received from business, academia, and the government will be valuable to the Commission and the Department, other bodies responsible for law and policy, IP owners and their counsel, and, ultimately, to consumers.

The hearings covered a number of important topics. We would like to focus our comments on the three topics most relevant to the software industry, namely: (1) the role of IP rights in innovation; (2) the role of patents in the software industry; and (3) the role of IP licensing, including standards-related licensing and participation.

1. Intellectual Property Rights and Innovation in the Software Industry

Microsoft believes that consistent and balanced worldwide IP protection promotes innovation and competition and is important to the continued growth of the knowledge-based economy. As the FTC previously has recognized “[t]here is no dispute about the enormous importance of innovation to the increased productivity and global competitiveness of U.S. companies and to economic growth in this country.”¹ As the testimony offered during these hearings demonstrates, there is no single analytic framework or economic study that can provide definitive guidance to policy makers’ concerning the relationship between intellectual property, investment, innovation, and competition. Even a cursory discussion raises numerous questions. For example, what kinds of innovation are important, what sources of investment are needed to produce those innovations, and what role does IP play in promoting such investments?

Long-term sustainable innovation requires a cycle of investment and re-investment that is in many cases derived from profits made on new products and services. The cycle may begin with an initial investment in R&D, which results in the deployment of new products or services. Those products and services produce a return on the initial investment that in turn can be used for further investment in R&D. While initial investments may at times not be motivated by the potential return, such as may be the

¹ FTC Staff Report, *Anticipating the 21st Century: Competition Policy in the New High-Tech, Global Environment*, ch. 6, p. 2 (May 1996)(“*FTC Staff Report*”).

case with government funded R&D, the potential positive return on investment is very often a motivating factor for investment from private enterprises. Even when governments fund R&D for the purpose of solving a public interest problem, private enterprise may substantially invest in R&D to develop and commercialize products and services based on such solutions that benefit consumers.

IP plays an important role in driving innovation by providing a basis for a return on investment and for re-investment in further R&D. We think it is useful to consider both the various types and phases of innovation and the sources of investment as part of a broader framework for understanding the role of IP in the innovation life cycle.

a. *Types and Phases of Innovation:* The questions posed by the FTC and DOJ in the Notice of these Hearings recognize the value in considering the role that IP plays in various stages in an innovation life cycle.

Conception: The path of innovation often begins with an idea for a product or process. This initial step may be the result of quick inspiration or a long process of thought, experimentation, and development. The investment required to produce an idea may vary considerably, both in terms of the time and energy devoted to the specific project, as well as the background research, training, and resources required to enable the conception.

Commercialization: For consumers to benefit from innovation, however, ideas must typically be implemented in commercial products or services. The commercialization phase, which is sometimes overlooked in discussions of innovation, may be critical to the delivery of consumer value and often requires enormous investments. In many instances, commercialization may involve the creation of an initial prototype or “proof of concept” work, followed by rigorous and involved engineering work that brings an effective product or service to market. Commercialization of a product often also requires many non-engineering investments, including consumer tests, competitive benchmarking, and product marketing. As in the conception phase, the magnitude of the investments made to commercialize an invention may vary considerably. For example, Microsoft made large investments associated with products like the Xbox game console and the Windows XP operating system. Testing costs alone for the Windows XP operating system have been estimated at \$500 million. Smaller companies and individuals may pursue projects involving smaller absolute dollar investments, but even greater relative investments and risks.

Incremental innovation: The path of innovation is often incremental, with new ideas added, and products developed and commercialized, using earlier work as the foundation and building blocks. In some cases, the investment required to take the next step forward may be relatively modest; in other cases, it can be quite large. The development and product costs associated with the Windows XP operating system, for example, which was constructed on the shoulders of our Windows NT and Windows Me operating systems, were very significant. Over

the years, Microsoft has invested more than \$6 billion in developing its operating system products (and billions more in creating development tools and applications that enhance the value of the platform). In the software world, incremental innovation can involve a tremendous amount of critical, but unglamorous, engineering work, including, for example, enhancements to system security and integrity. The investment required for this type of innovation can be significant.

b. *Sources of Investment:* In thinking about the role that IP plays in promoting the above investments, it is useful to highlight a few important sources of investment including: government, academia, and the private sector.

Government: The government has, historically, been a tremendous source of investment in U.S. innovation. For example, investments made by the Defense Advanced Research Projects Agency (DARPA) were critical to the development of today's Internet. The government may have many motivations for such investments, and we have seen instances where government-funded innovations have been developed by the commercial sector to create compelling new products, services, and technology. As this technology is commercialized by the private sector, it fuels job creation, productivity gains, trade surpluses, and tax revenues – which in turn fund additional government technology investments.

Academia: Academia has been another significant source of investment in U.S. innovation. For example, the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign made early investments in the development of a graphical browser for the world-wide web. Like the government, universities and their employees may have varying motivations for such investments, including education and public research. Direct economic return on investments may, however, be increasingly important to academia.

Private Sector: The private sector has traditionally been and continues to be a significant source of investment in U.S. innovation. Spending on R&D by firms in the software industry in 2000 alone was over \$12 billion and since 1997 has accounted for over \$38 billion.² Private sector investments have resulted in many beneficial Internet-related technologies. Companies such as Microsoft and Netscape generated significant new and follow-on innovations with respect to web browser technologies, and investments by Microsoft and IBM led to the creation of Internet standards to create interoperability. To a large degree, even modest investments made by the private sector are made with the expectation of some financial return on investment. As discussed below, the rights and protection afforded by IP, especially in the knowledge-based economy, provide one basis for obtaining the requisite return on investment. That return may support additional government and academic investments through tax base growth, grants, and other vehicles.

² National Science Foundation Annual Survey of Industrial Research & Development (Early Release Tables 2000).

All three sources of investment are important. While a return on investment may be less important to government and academia, innovation cannot depend solely on these sources of funding. The private sector, which depends on its ability to obtain a financial return on its investment, plays a key role and must be encouraged to invest significantly in new innovations.

c. *The Role of IP*: The importance of IP rights to innovation is reflected in Article I, Section 8 of the Constitution which empowers Congress to enact law “[t]o promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.” In the software context, IP rights provide the owner of such rights protections from unlicensed copying and cloning that reduce returns on investment. IP protection consequently provides an important incentive for private sector investment, particularly in the commercialization phase of the innovation cycle. In the software industry, factors such as the magnitude of the investment required, the relatively short life cycle of many products, and the relative ease of piracy, highlight the need and importance of IP protection. The level of private sector investments will often vary according to the investors’ ability to seek and obtain IP protection. Copyrights, trade secrets, patents, and trademarks all play distinct and important roles in the legal lattice that fosters private sector innovation.

As to the effect on competition, Section 1 of the 1995 *Antitrust Guidelines for the Licensing of Intellectual Property* noted the important role that IP plays in promoting competition.³ But the *Guidelines* also support the important role of IP in innovation as we have described here:

The intellectual property laws and the antitrust laws share the common purpose of promoting innovation and enhancing consumer welfare. The intellectual property laws provide incentives for innovation and its dissemination and commercialization by establishing enforceable property rights for the creators of new and useful products, more efficient processes, and original works of expression. In the absence of intellectual property rights, imitators could more rapidly exploit the efforts of innovators and investors without compensation. Rapid imitation would reduce the commercial value of innovation and erode incentives to invest, ultimately to the detriment of consumers.

That continues to hold true today.

d. *Conclusions*: Microsoft believes that the existing framework of IP and competition laws is working well for consumers, individual intellectual property owners, and businesses large and small, including those in the software industry. As discussed below, the software industry in the United States has grown tremendously under this framework, and Microsoft expects IP to continue to be a significant driver of future investment and innovation in this segment of the knowledge-based economy. To date, there is no

³ U.S. Department of Justice and Federal Trade Commission, *Antitrust Guidelines for the Licensing of Intellectual Property* (1995).

evidence suggesting that changes to the existing balance would increase innovation and consumer welfare.

2. Role of Patents in the Software Industry

The Notice for these Hearings included a number of questions regarding the role of patents. The role of patents, particularly in the context of software-related inventions, has been the subject of long and considerable debate. What is known and not disputed, however, is that there has been dynamic growth and robust innovation in the software industry in the United States coincident with the provision of patent protection to software-related inventions. The contribution of software to the U.S. and world economy is impressive. A study released by the Business Software Alliance in 1999 projected that, by 2008, 4.3 million people will be directly and indirectly employed in the U.S. because of the demand for software, earning \$228 billion in wages and creating \$50 billion in tax revenue. In a 2001 study, IDC projected that global spending on packaged software would exceed \$305 billion. Another recent IDC study commissioned by Microsoft concluded that the IT industry in 28 countries would grow from 24.7% to 158% between 2001 and 2005. A more detailed study by Oxford Analytica looked at the impact that public policy has on this growth and concluded that IP protection is one of a number of important contributing factors, along with investment in IT education and training. Microsoft believes that IP protection will continue to play a central role in this growth.

Although the current system has fostered remarkable growth and innovation, Microsoft believes that the existing patent system can be improved by means that even more effectively achieve the constitutional goals of stimulating and protecting innovation in a competitive environment.

a. *Prior Testimony:* Microsoft testified in hearings regarding the patentability of software-related inventions before the U.S. Patent and Trademark Office in 1994. We concluded that the statute, regulations and case law provided an adequate and appropriate framework in which to assess the patentability of software-related inventions. Although acknowledging the importance of software-related patents, we also encouraged the Patent Office to pursue a number of opportunities to improve the patent process and the quality of issued patents. For example, we supported:

- Increasing the number of patent examiners and the expertise of the examiners in software technology and providing better technical training for the examiners;
- Increasing the availability of prior art to patent applicants, the Patent Office, and parties to threatened or actual infringement litigation; and
- Reducing the average pendency of patent applications before the Patent Office.

In the years since, we have been working with the PTO and other industry members to increase examiners' access to training in various computer science disciplines. We have

been providing financial and advisory support to the Software Patent Institute's efforts to improve the accessibility of software-related prior art. We have also encouraged members of Congress to allow the PTO to retain all of the fees paid by patent applicants for use in improving patent quality and reducing patent application pendency.

b. *View Today:* Microsoft remains a strong believer in the importance of IP protection, and we find no basis for affording software-related inventions any less protection than inventions arising from other industries. As Microsoft's investment in R&D has grown, so has our patent portfolio. Last year, we were issued slightly more than 500 new U.S. patents -- a milestone for us, but a moderate number in comparison to the record 3,411 new U.S. patents awarded to IBM in 2001 and the 18,769 data processing, electrical computer, and digital processing patents issued by the PTO in 2001.⁴ This growth in Microsoft's portfolio is a reflection of our increasing investment in technology and our belief in the importance of patents to the knowledge-based economy.

Despite the continued efforts of the PTO and patent applicants to improve the system, further opportunities remain. Our sense is that improvements in the patent process, rather than attempts to alter the scope of protection offered by the patent system, still provide the greatest areas of opportunity to improve the patent system's impact on innovation and competition. Improving patent quality will increase confidence in the validity of patents, thus making it easier for patent owners to commercialize their inventions and decreasing the possibility that potential defendants will have to address infringement allegations that ultimately prove to be without merit. A reduction in the pendency of patent applications would also enhance a patent owner's likelihood of obtaining an early return on its investments, which may be particularly important for small companies and individual inventors.

In its *21st Century Strategic Plan*, the PTO outlined a long-term plan for improving the patent system, including a focus on enhanced patent quality and reduced pendency of applications.⁵ Microsoft commends the PTO for its efforts and believes that, with the support of organizations like Intellectual Property Owners and the American Intellectual Property Law Association, an appropriate plan can be implemented to achieve these important objectives. Microsoft also believes that it is important for the Patent Office to be allowed to retain and use all of the fees paid by applicants for projects targeting these objectives. Microsoft will continue to encourage Congress to allow the PTO to invest user fees in this manner.

3. IP Licensing & Standards Licensing and Participation

One of the questions posed in the notice of these Hearings was whether the 1995 *Antitrust Guidelines for the Licensing of Intellectual Property* have been a helpful

⁴ U.S. Patent and Trademark Office, *Patent Counts by Class by Year, January 1977-December 31, 2001* (April 2002). We note that the PTO's classifications for data processing, electrical computer, and digital processing patents are not coextensive with the number software patents issued by the PTO each year, which do not have a separate designation.

⁵ U.S. Patent and Trademark Office, *The 21st Century Strategic Plan* (July 2002).

guidepost to business. The answer is a clear “yes.” The greater certainty provided by the 1995 *Guidelines* has proven to be important to business and in promoting competition.

The Hearing notice also suggested an interest in variations in licensing practices and the *Guidelines*’ usefulness across industries. Microsoft is unaware of any variations in software licensing that would warrant the formulation or application of a different set of guidelines than those applied to IP licensing in other contexts. We believe that the 1995 *Guidelines* provide business an appropriate level of specificity and certainty without potentially chilling lawful and pro-consumer business practices. There are, however, aspects of standards licensing as it relates to the knowledge-based economy generally and the software field specifically that we believe deserve to be highlighted.

Standards setting originated prior to the growth of the knowledge-based economy and has a strong record of facilitating pro-competitive advances in many industries. Standards setting also plays a critical role in innovation and competition within the knowledge-based economy. Microsoft is one of many companies actively participating in various standards initiatives directed by organizations like the International Standards Organization, the European Computer Manufacturers Association, the Internet Engineering Task Force, and the World Wide Web Consortium.

Standards organizations typically have policies that require participants to agree to license certain IP rights relating to the standard. The IP sharing associated with such voluntary standards is broadly recognized as pro-competitive. For example, historically, IPR policies associated with standards have required participants to agree to license their copyright in their contributions to the standards body, so that the text of the resulting standard can be made freely available to the public. Similarly, such policies have required participants to license their essential, or blocking, patents to other participants and third parties on reasonable and non-discriminatory (RAND) terms. A RAND license policy preserves the patent owner’s rights, including the right to charge a reasonable fee or royalty.

RAND licensing of IP in standards represents a balanced approach that has a number of important pro-competitive attributes:

- It encourages widespread participation in the standards process because companies with existing investments in innovation and IP can participate without foregoing ownership and control of their IP, or without losing the opportunity to obtain a reasonable return on those investments.
- It encourages the adoption of the best technical solution for the standard because, in addition to promoting broad participation, individual participants can submit their best solution, regardless of whether or not it is patented and, in some cases, receive a return on their investment if a patented solution is adopted.

- It reduces potential “blocking patent” issues (and therefore encourages widespread adoption) by requiring participants to agree to license patents that are essential or necessary to the standard.
- It promotes widespread and varied implementations of the resultant standard by making licenses readily available on reasonable and non-discriminatory royalty and other terms.
- It promotes competition and product differentiation among companies, products implementing the standard, and even other products, in various ways, including by limiting the license grants provided (e.g., to essential or necessary rights), while still promoting interoperability among these diverse, competing and complementary products.

Some have suggested that RAND might not be the appropriate policy for the software industry. Those promoting special treatment for software-related standards have posited that (1) software standards should never include patented technology, and (2) RAND fees for software-related standards will block their adoption. The first argument is really a policy objection to providing patent protection for software and consequently should not be viewed as part of an effort to define appropriate IP policies within standards-setting organizations. We addressed this concern in Section 2 discussing the importance of proper patent protection. The second concern is contradicted by the successful development and industry adoption of a vast number of software standards over the past decade under RAND IPR policies.

Given the history of successful standards-setting initiatives promulgated under RAND IPR policies both within and outside the software industry, deviations from the RAND approach, especially on an industry-by-industry basis, should not be considered absent a substantial showing of abuse. To date, there is no reason for applying any different competition rules to software standards than to standards associated with other industries. Nor is there any basis for concluding that Internet-based standards are somehow unique and require different IP policies that, for example, prohibit patented technology in the standards or mandate royalty-free licenses. In fact, the Internet Engineering Task Force (IETF) allows RAND-based standards development and has produced numerous technical standards.

Standards licensing practices should continue to promote the widespread implementation of the best technical solutions in ways that respect IP rights and encourage further competition among companies and products implementing the standard. Policies or terms that might impede these important objectives should, obviously, be avoided.

4. Conclusion

The intersection of IP and competition law is of great importance to the knowledge-based economy and raises many complex issues. Microsoft appreciates your efforts to improve the understanding of all stakeholders in this critical area. Although these hearings have

touched on many issues important to Microsoft and the software industry more generally, we would like to underscore four points:

- ? *IP is important to a healthy innovation cycle.* As recognized by the Constitution, courts, and past guidelines from the FTC and DOJ, consistent and balanced IP rights play an essential role in fostering new and follow-on innovation by allowing returns on investment and discouraging misappropriation. Consequently, we believe that the FTC and DOJ’s attention to this area is well placed. We also encourage the continued exercise of prudence. As the FTC Staff has previously observed, “the recognized importance of innovation has led competition policy makers and enforcers in recent decades consistently to avoid inadvertently subverting any innovation efforts by reducing a firm’s incentives to succeed.”⁶
- ? *The existing patent system has worked well for software.* Microsoft is not aware of any changes to the patent laws’ application to software that would better or more reliably serve the Constitutional goals of stimulating and protecting innovation in a competitive environment. What is known is that the existing patent laws are fundamentally sound and have enabled extraordinary innovation in the software industry. We, however, support enhancements to the patent process, such as those we have identified above, that would even further encourage the development of inventive software technologies.
- ? *The DOJ & FTC’s 1995 Antitrust Guidelines for the Licensing of Intellectual Property continue to provide relevant and clear guidance to the software industry.* The 1995 Guidelines have provided industry with an appropriate level of specificity and certainty without potentially chilling lawful and pro-competitive business practices. Microsoft is not aware of any special characteristics of software that would warrant the formulation of *sui generis* guidelines for software licensing, particularly given the limitations of across-the-board generalizations in highly dynamic markets such as software.
- ? *RAND strikes the right balance for standards setting.* RAND licensing represents a balanced approach to standard setting with a number of pro-competitive attributes that we have identified above. RAND policies generally have promoted the widespread implementation of the best technical solutions in ways that respect IP rights and encourage further innovation and competition among companies and products implementing the standard. The software industry is replete with examples of the successful adoption and promotion of software standards developed under RAND IPR policies.

Microsoft would like to thank the FTC and DOJ for the opportunity to participate in these hearings.

⁶ *FTC Staff Report* ch. 6, p. 2.