TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY

EXECUTIVE SUMMARY

Innovation benefits consumers through the development of new and improved goods, services, and processes. An economy's capacity for invention and innovation helps drive its economic growth and the degree to which standards of living increase.[1] Technological breakthroughs such as automobiles, airplanes, the personal computer, the Internet, television, telephones, and modern pharmaceuticals illustrate the power of innovation to increase prosperity and improve the quality of our lives.

Competition and patents stand out among the federal policies that influence innovation. Both competition and patent policy can foster innovation, but each requires a proper balance with the other to do so. Errors or systematic biases in how one policy's rules are interpreted and applied can harm the other policy's effectiveness. This report by the Federal Trade Commission (FTC) discusses and makes recommendations for the patent system to maintain a proper balance with competition law and policy.[2] A second joint report, by the FTC and the Antitrust Division of the Department of Justice (DOJ) (forthcoming), will discuss and make recommendations for antitrust to maintain a proper balance with the patent system.

Competition and Patent Law and Policy Promote Innovation and Benefit the Public.

Competition through free enterprise and open markets is the organizing principle for most of the U.S. economy. Competition among firms generally works best to achieve optimum prices, quantity, and quality of goods and services for consumers. Antitrust law, codified in the Sherman Act, the FTC Act, and other statutes, seeks "to maximize consumer welfare by encouraging firms to behave competitively."[3]

Competition can stimulate innovation. Competition among firms can spur the invention of new or better products or more efficient processes. Firms may race to be the first to market an innovative technology. Companies may invent lower-cost manufacturing processes, thereby increasing their profits and enhancing their ability to compete. Competition can prompt firms to identify consumers' unmet needs and develop new products or services to

[1] Federal Reserve Board Vice Chairman Roger W. Ferguson, Jr., Patent Policy in a Broader Context, Remarks at 2003 Financial Markets Conference of the Federal Reserve Bank of Atlanta (April 5, 2003), *at* http://www.federalreserve.gov/boarddocs/speeches/2003/20030407/default.htm.

[2] The Federal Trade Commission issues reports pursuant to Section 6(f) of the Federal Trade Commission Act, 15 U.S.C. § 46(f).

[3] I PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW : AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶100a at 4 (2000).

satisfy them.

Patent policy also can stimulate innovation. The U.S. Constitution authorizes Congress "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries."[4] To obtain a patent, an invention (that is, a product, process, machine, or composition of matter) must be novel, nonobvious, and useful. Moreover, a patentee must clearly disclose the invention. A patent confers a right to exclude others from making, using, or selling in the United States the invention claimed by the patent for twenty years from the date of filing the patent application.

This property right can enable firms to increase their expected profits from investments in research and development, thus fostering innovation that would not occur but for the prospect of a patent. Because the patent system requires public disclosure, it can promote a dissemination of scientific and technical information that would not occur but for the prospect of a patent.

Like competition policy, patent policy serves to benefit the public. "The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility."[5] The public disclosure of scientific and technical information is part of the consideration that the inventor gives the public.[6]

Competition and Patents Must Work Together in the Proper Balance.

Competition and patents are not inherently in conflict. Patent and antitrust law "are actually complementary, as both are aimed at encouraging innovation, industry, and competition."[7] Patent law plays an important role in the property rights regime essential to a well-functioning competitive economy. For example, firms may compete to obtain the property rights that patents convey. Patents do not necessarily confer monopoly power on their holders,[8] and most business conduct with respect to patents does not unreasonably restrain or serve to monopolize markets. Even when a patent does confer monopoly power, that alone does not create an antitrust violation. Antitrust law recognizes that a patent's creation of monopoly power can be

---

[4] U.S. CONST. art. I, § 8. Other sections of this constitutional provision authorize copyright law.

[5] *Brenner v. Manson,* 383 U.S. 519, 534-35 (1966). The consideration an inventor gives in return for a patent "is the benefit which he confers upon the public by placing in their hands a means through the use of which their wants may be supplied." 1 WILLIAM ROBINSON, THE LAW OF PATENTS FOR USEFUL INVENTIONS § 22 at 305 (1890), *cited in* ROBERT P. MERGES & JOHN F. DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS 361 (3d ed. 2002).

[6] *See* James E. Rogan, *Prepared Remarks of James E. Rogan, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office* (2/6/02) 2, *at* http://www.ftc.gov/opp/intellect/rogan.htm.

[7] *Atari Games Corp. v. Nintendo of Am.,* 897 F.2d 1572, 1576 (Fed. Cir.1990).

[8] ROBERT L. HARMON, PATENTS AND THE FEDERAL CIRCUIT § 1.4(b) at 21 (5th ed. 2001) ("Patent rights are not legal monopolies in the antitrust sense of the word. Not every patent is a monopoly, and not every patent confers market power.").

necessary to achieve a greater gain for consumers.

Analogously, the Supreme Court has recognized the importance of competition to the patent system.[9] "[F]ree competition" is "the baseline" on which "the patent system's incentive to creative effort depends."[10] By limiting the duration of a patent, "[t]he Patent Clause itself reflects a balance between the need to encourage innovation and the avoidance of monopolies which stifle competition without any concomitant advance in the 'Progress of Science and useful Arts.'"[11] The patentability requirements for novelty and nonobviousness "are grounded in the notion that concepts within the public grasp, or those so obvious that they readily could be, are the tools of creation available to all."[12]

A failure to strike the appropriate balance between competition and patent law and policy can harm innovation. For example, if patent law were to allow patents on "obvious" inventions, it could thwart competition that might have developed based on the obvious technology. *See* Box 1. Conversely, competition policy can undermine the innovation that the patent system promotes if overzealous antitrust enforcement restricts the procompetitive use of a valid patent. *See* Box 2.

Box 1. ***An Invalid Patent on an Obvious Invention Can Harm Competition.***

In 1895, George Selden obtained a U.S. patent with a claim so broad that "it literally encompasse[d] most automobiles ever made." Yet the basic invention covered by that claim – putting a gasoline engine on a chassis to make a car – was so obvious that many people worldwide thought of it independently as soon as the most primitive gasoline engines were developed. The association that licensed the Selden patent collected hundreds of thousands of dollars in royalties – raising costs and reducing the output of automobiles – before Henry Ford and others challenged the patent, and the patent claim was judicially narrowed in 1911. *See* MERGES & DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS at 644-46.

The FTC/DOJ Hearings Examined the Balance of Competition and Patent Law and Policy.

To examine the current balance of competition and patent law and policy, the FTC and the DOJ held Hearings from February through November 2002. The Hearings took place over 24 days, and involved more than 300 panelists, including business representatives from large and small firms, and the independent inventor community; leading patent and antitrust organizations; leading antitrust and patent practitioners; and leading scholars in

---

[9] *See Bonito Boats, Inc. v. Thunder Craft Boats, Inc.,* 489 U.S. 141, 146 (1989) (federal patent laws embody "a careful balance between the need to promote innovation and the recognition that imitation and refinement through imitation are both necessary to invention itself and the very lifeblood of a competitive economy.").

[10] *Id.* at 156.

[11] *Id.* at 146.

[12] *Id.* at 156.

Box 2. ***Overzealous Antitrust Enforcement Can Undermine the Innovation that Patents Promote.***

In the 1970's, antitrust enforcers viewed grantbacks (*e.g.,* when a licensee has improved patented technology, it "grants back" to the original patentee access to the improvement) as automatically illegal. More recently, antitrust enforcers recognize that "[g]rantbacks can have procompetitive effects," for example, by encouraging a patentee to license its patent in the first place, thereby enabling the licensee's improvement. Antitrust enforcers now evaluate likely procompetitive and anticompetitive effects of grantbacks. Past antitrust rules may have deterred some procompetitive grantbacks, however, thus deterring some innovations using patented technology. *See* U.S. Department of Justice and Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property § 5.6 (Apr. 6, 1995), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,132, *available at* http://www.usdoj.gov/atr/public/guidelines/ipguide.htm.

economics and antitrust and patent law.[13] In addition, the FTC received about 100 written submissions. Business representatives were mostly from high-tech industries: pharmaceuticals, biotechnology, computer hardware and software, and the Internet.[14] This report discusses Hearings testimony and independent research, and explains the Commission's conclusions about and recommendations for the patent system.

CONCLUSIONS AND RECOMMENDATIONS

I. Although Most of the Patent System Works Well, Some Modifications Are Needed to Maintain A Proper Balance of Competition and Patent Law and Policy.

The patent system does, for the most part, achieve a proper balance with competition policy. The statutory standards of patentability appear largely compatible with competition; properly interpreted, they tend to award patents only when necessary to provide incentives for inventions, their commercial development, or their disclosure. Congress has enacted new statutes that protect competition by, among other things, facilitating disclosures of patent applications. The Court of Appeals for the Federal Circuit, the sole court for most patent law appeals, has brought stability and increased predictability to various elements of patent law. This has reduced legal uncertainty and facilitated business planning. The Patent and Trademark Office (PTO) has implemented initiatives to deal with new types of patents and has released a Strategic Plan for the 21st Century to improve patent quality (*i.e.,* reduce errors) and streamline procedures.[15] Hearings participants found much to praise in the current patent system.

---

[13] The Commission thanks the DOJ and the Patent and Trademark Office for participating in many of the panels at the Hearings and for recommending many of the participants in the Hearings. For providing facilities to allow some of the Hearings to be held on the West Coast, the Commission thanks the Competition Policy Center and the Berkeley Center for Law and Technology at the University of California at Berkeley.

The Commission wishes to note the expertise and time contributed by Hearings participants. For all of their contributions, the Commission conveys its thanks.

[14] *See* Appendices A and B.

[15] *See* United States Patent and Trademark Office, The 21st Century Strategic Plan, *at* www.uspto.gov/web/offices/com/strat21/index.htm.

Nonetheless, many participants in and observers of the patent system expressed significant concerns that, in some ways, the patent system is out of balance with competition policy. Poor patent quality and legal standards and procedures that inadvertently may have anticompetitive effects can cause unwarranted market power and can unjustifiably increase costs. Such effects can hamper competition that otherwise would stimulate innovation. This report makes several recommendations for the legal standards, procedures, and institutions of the patent system to address such concerns.

II. Questionable Patents Are a Significant Competitive Concern and Can Harm Innovation.

A poor quality or questionable patent is one that is likely invalid or contains claims that are likely overly broad. Hearings participants raised concerns about the number of questionable patents issued.[16] Such patents can block competition, *see* Box 3, and harm innovation in several ways.

A. Questionable Patents Can Deter or Raise the Costs of Innovation.

One firm's questionable patent may lead its competitor to forgo R&D in the areas that the patent improperly covers. For example, firms in the biotech industry reported that they avoid infringing questionable patents and therefore will refrain from entering or continuing with a particular field of research that such patents appear to cover.[17] Such effects deter market entry and follow-on innovation by

Box 3. ***Blocking Patents***

The patents of others can block a patentee's ability to exploit its own invention. For example:

> "[S]uppose that Admiral Motors obtains a patent on an internal combustion engine for use in automobiles. Later, Betty Beta purchases an automobile marketed by Admiral Motors that embodies the patented invention. Beta experiments with her new car and develops a dramatically improved fuel injector useable only in the patented Admiral Motors engine. Even if Beta patents her improved fuel injector, she cannot practice that technology without infringing Alpha's basic patent. . . . Unless one of the parties licenses the other, Beta must wait until Admiral Motors' patent expires before practicing her own patented improvement invention." ROGER E. SCHECHTER & JOHN R. THOMAS, INTELLECTUAL PROPERTY: THE LAW OF COPYRIGHTS, PATENTS AND TRADEMARKS § 20.1.1 at 462 (2003). If the blocking patent is invalid or overbroad, then no public benefits exist to justify its effects on follow-on innovation.

[16] For example, software firms raised concerns about patents that they believed should not have been granted, because the inventions were obvious based on preceding work in the area. While praising patents as the basis for their industry, biotech firms also raised concerns that some overbroad patents may discourage further innovation in some biotech areas. *See generally* Chs. 2 and 3.

[17] *See, e.g., FTC/DOJ Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, David J. Earp Testimony Feb. 26, 2002*, at pages 290-91, 238 (hereinafter, citations to transcripts of these Hearings state the speaker's last name, the date of testimony, and relevant page(s)); Blackburn 2/26 at 296; Caulfield 3/19 at 161.

competitors and increase the potential for the holder of a questionable patent to suppress competition.

If a competitor chooses to pursue R&D in the area improperly covered by the questionable patent without a license to that patent, it risks expensive and time-consuming litigation with the patent holder. If the competitor chooses to negotiate a license to and pay royalties on the questionable patent, the costs of follow-on innovation and commercial development increase due to unjustified royalties.

Another option is to find a legal means to invalidate the patent. PTO procedures allow only very limited participation by third parties, however. A lawsuit in federal court may not be an alternative, because a competitor may not sue to challenge patent validity unless the patent holder has threatened the competitor with litigation. If the competitor is not on the verge of marketing an infringing product, the patent holder may have no reason to threaten litigation. In these circumstances, as one biotech representative complained, "there are these bad patents that sit out there and you can't touch them."[18] If litigation does take place, it typically costs millions of dollars and takes years to resolve. This wastes resources.

B. In Industries with Incremental Innovation, Questionable Patents Can Increase "Defensive Patenting" and Licensing Complications.

In some industries, such as computer hardware and software, firms can require access to dozens, hundreds, or even thousands of patents to produce just one commercial product. One industry representative from a computer hardware firm reported that more than "90,000 patents generally related to microprocessors are held by more than 10,000 parties."[19] Many of these patents overlap, with each patent blocking several others. This tends to create a "patent thicket" – that is, a "dense web of overlapping intellectual property rights that a company must hack its way through in order to actually commercialize new technology."[20]

Much of this thicket of overlapping patent rights results from the nature of the technology; computer hardware and software contain an incredibly large number of incremental innovations. Moreover, as more and more patents issue on incremental inventions, firms seek more and more patents to have enough bargaining chips to obtain access to others' overlapping patents.[21] One panelist asserted that the time and money his software company spends on creating and filing these so-called defensive patents, which "have no . . . innovative value in and of themselves," could have been better spent on developing new

[18] Blackburn 2/26 at 295-96.

[19] Detkin 2/28 at 667-68.

[20] Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting*, *in* 1 INNOVATION POLICY AND THE ECONOMY 119, 120 (Adam Jaffe et al. eds., 2001).

[21] The forthcoming FTC/DOJ joint report will discuss the proper antitrust evaluation of licensing techniques used in such situations.

technologies.[22]

Questionable patents contribute to the patent thicket. In the context of a patent thicket, questionable patents can introduce new kinds of licensing difficulties, such as royalties stacked one on top of another, and can increase uncertainty about the patent landscape, thus complicating business planning. Questionable patents in patent thickets can frustrate competition by current manufacturers as well as potential entrants. Because a manufacturer needs a license to all of the patents that cover its product, firms can use questionable patents to extract high royalties or to threaten litigation.[23] For example, a questionable patent that claims a single routine in a software program may be asserted to hold up production of the entire software program. This process can deter follow-on innovation and unjustifiably raise costs to businesses and, ultimately, to consumers.

C. Recommendations to Improve Patent Quality and Minimize Anticompetitive Costs of the Patent System.

One recent article argues persuasively that because most patent applications involve claims of little economic significance, "it is much cheaper for society to make detailed [patent] validity determinations in those few cases [in which patents are challenged] than to invest additional resources examining patents that will never be heard from again."[24] Accordingly, the FTC's recommendations focus first on procedures and presumptions used in challenging questionable patents, because such challenges are more likely to involve patents of competitive significance.

Recommendation 1:

As the PTO Recommends, Enact Legislation to Create A New Administrative Procedure to Allow Post-Grant Review of and Opposition to Patents.

The PTO discusses patent applications only with the patent applicant. Until recently, third parties could only bring certain relevant documents to the attention of, and, in limited circumstances, file a written protest with, an examiner or to request the PTO Director to reexamine a patent. To address this situation, Congress passed legislation to establish limited procedures that allow third parties to participate in patent reexaminations. Recent amendments have improved those procedures, but they still contain important restrictions and disincentives for their use. Once a questionable patent has issued, the most effective way to challenge it is through litigation. Litigation generally is extremely

---

[22] Greenhall 2/27 at 377, 420.

[23] "Large and small companies are increasingly being subjected to litigation (or its threat) on the basis of questionable patents." *United States Patent and Trademark Office Fee Modernization Act of 2003: Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Property of the House Comm. on the Judiciary*, 108th Cong. 2 (2003) (Statement of Michael K. Kirk, Executive Director, American Intellectual Property Law Association), *available at* http://www.aipla.org/html/Legislative/108/testimony/FeeLeg.htm.

[24] Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. L. REV. 1495, 1497 (2001).

costly and lengthy,[25] and is not an option unless the patent owner has threatened the potential challenger with patent infringement litigation.

The existing procedures attempt to balance two perspectives. On the one hand, third parties in the same field as a patent applicant may have the best information and expertise with which to assist in the evaluation of a patent application, and therefore might be useful participants in the process of deciding whether to grant a patent. On the other hand, the limited involvement of third parties in the issuance and reexamination of patents reflects genuine concern to protect patent applicants from harassment by competitors. This remains an important goal. To continue to protect against the possibility of competitors harrassing patent applicants, any new procedure should be available only after a patent issues.

Because existing means for challenging questionable patents are inadequate, we recommend an administrative procedure for post-grant review and opposition that allows for meaningful challenges to patent validity short of federal court litigation. To be meaningful, the post-grant review should be allowed to address important patentability issues.[26] The review petitioner should be required to make a suitable threshold showing. An administrative patent judge should preside over the proceeding, which should allow cross-examination and carefully circumscribed discovery, and which should be subject to a time limit and the use of appropriate sanctions authority. Limitations should be established to protect against undue delay in requesting post-grant review and against harassment through multiple petitions for review. The authorizing legislation should include a delegation of authority permitting the PTO's conclusions of law to receive deference from the appellate court. Finally, as is the case with settlements of patent interferences, settlement agreements resolving post-grant proceedings should be filed with the PTO and, upon request, made available to other government agencies.

Recommendation 2:

Enact Legislation to Specify that Challenges to the Validity of a Patent Are To Be Determined Based on a "Preponderance of the Evidence."

An issued patent is presumed valid. Courts require a firm that challenges a patent to prove its invalidity by "clear and convincing evidence." This standard appears unjustified. A plethora of presumptions and procedures tip the scales in favor of the ultimate issuance of a patent, once an application is filed. In addition, as many have noted, the PTO is underfunded, and PTO patent examiners all too often do not have sufficient time to evaluate patent applications fully. These circumstances suggest that an overly strong presumption of a patent's validity is inappropriate. Rather, courts should require only a "preponderance of the evidence" to rebut the presumption of validity.

---

[25] A biotechnology case, for example, can cost between five and seven million dollars and take two or three years to litigate. *See* Ch. 3.

[26] At a minimum, patent challengers should be able to raise issues of novelty, nonobviousness, written description, enablement, and utility.

The PTO works under a number of disadvantages that can impede its ability to reduce the issuance of questionable patents. Perhaps most important, the courts have interpreted the patent statute to require the PTO to grant a patent application unless the PTO can establish that the claimed invention does not meet one or more of the patentability criteria. Once an application is filed, the claimed invention is effectively presumed to warrant a patent unless the PTO can prove otherwise.

The PTO's procedures to evaluate patent applications seem inadequate to handle this burden. The patent prosecution process involves only the applicant and the PTO. A patent examiner conducts searches of the relevant prior art,[27] a focal point of the examination process, with only the applicant's submissions for assistance. The patent applicant has a duty of candor to the PTO, but that duty does not require an applicant to search for prior art beyond that about which the applicant already knows.[28] If the patent applicant makes assertions or files documentary evidence regarding certain facts, the PTO does not have facilities with which to test the accuracy or reliability of such information.

Moreover, presumptions in PTO rules tend to favor the issuance of a patent. For example, "[i]f the examiner does not produce a *prima facie* case [of obviousness], the applicant is under no obligation to submit evidence of nonobviousness."[29] Similarly, "[o]ffice personnel . . . must treat as true a statement of fact made by an applicant in relation to [the asserted usefulness of the invention], unless countervailing evidence can be provided that shows that one of ordinary skill in the art would have a legitimate basis to doubt the credibility of such a statement."[30] Likewise, "[t]here is a strong presumption that an adequate written description of the claimed invention is present when the application is filed."[31]

The PTO's resources also appear inadequate to allow efficient and accurate screening of questionable patent applications. Patent applications have doubled in the last twelve years and are increasing at about 10% per year.[32] With yearly applications approximating 300,000,

---

[27] "Prior art" consists of materials – often patents and publications, although affidavits and testimony also may present prior art – that reflect one or more of the features or elements of the claimed invention. An invention is "obvious" if it does not represent a sufficient step beyond the prior art.

[28] The PTO's Manual of Patent Examining Procedure (MPEP) states that the agency "does not investigate" duty of disclosure issues and "does not . . . reject" applications on that basis. *See* United States Patent and Trademark Office, *Manual of Patent Examining Procedure* § 2010 (8th edition 2001) (explaining that such PTO determinations "would significantly add to the expense and time involved in obtaining a patent with little or no benefit to the patent owner or any other parties with an interest"), *available at* http://www.uspto.gov/web/offices/pac/mpep/mpep.htm (hereinafter MPEP).

[29] MPEP § 2142.

[30] United States Patent and Trademark Office, *Utility Examination Guidelines*, 66 Fed. Reg. 1092, 1098-99 (2001).

[31] United States Patent and Trademark Office, *Guidelines for Examination of Patent Applications under the 35 U.S.C. 112 ¶ 1, "Written Description" Requirement*, 66 Fed. Reg. 1099, 1105 (2001).

[32] Lerner 2/20 at 157; James Langenfeld, *Innovation, Competition, and Intellectual Property: Providing an Economic Framework* (2/20/02) (slides) at 6, at http://www.ftc.gov/opp/intellect/langenfeld.pdf.

they arrive at the rate of about 1,000 each working day.[33] A corps of some 3,000 examiners must deal with the flood of filings.[34] Hearings participants estimated that patent examiners have from 8 to 25 hours to read and understand each application, search for prior art, evaluate patentability, communicate with the applicant, work out necessary revisions, and reach and write up conclusions. Many found these time constraints troubling.[35] Hearings participants unanimously held the view that the PTO does not receive sufficient funding for its responsibilities.

Finally, the PTO grants patents based only on the "preponderance of the evidence." This standard applies in the context of an underlying presumption that the patent should be granted unless the PTO can prove otherwise. It does not seem sensible to treat an issued patent as though it had met some higher standard of patentability.

Defenders of the application of the "clear and convincing" evidence standard urged that a finding of patent validity by a neutral government agency using a knowledgeable examiner justifies placing a heavy burden on those who challenge a patent's validity. We disagree. Presumptions and procedures that favor the grant of a patent application, combined with the limited resources available to the PTO, counsel against requiring "clear and convincing evidence" to overturn that presumption. We believe the "clear and convincing evidence" burden can undermine the ability of the court system to weed out questionable patents,[36] and therefore we recommend that legislation be enacted to amend the burden to a "preponderance of the evidence."

Recommendation 3:

Tighten Certain Legal Standards Used to Evaluate Whether A Patent Is "Obvious."

Patent law precludes patenting if the differences between the claimed invention and the prior art[37] are such that "the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art."[38] "Nonobviousness asks whether a development is a significant enough technical advance to merit the award of a patent."[39] A proper application of this statutory requirement is crucial to prevent the issuance of questionable patents, including trivial patents and patents on inventions essentially already in the public domain. The courts have developed a variety of tests to evaluate the obviousness of a claimed invention. Two in particular –

---

[33] Chambers 2/8 (Patent Law for Antitrust Lawyers) at 86 (hereinafter 2/8 (Patent Session)).

[34] Chambers 2/8 (Patent Session) at 84.

[35] *See, e.g.,* Dickinson 2/6 at 64-65 ("Patent examiners need more time to examine."); Kirschner 2/26 at 242-43 (time available "clearly inadequate" for a meaningful examination of a biotech patent application); Kesan 4/10 at 100 (time constraints do not allow adequate search for software prior art).

[36] *See* T.S. Ellis 7/11 at 119-20.

[37] *See supra* note 25.

[38] 35 U.S.C. § 103.

[39] *See* MERGES & DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS at 644.

the "commercial success test" and "the suggestion test" – require more thoughtful application to weed out obvious patents.

a. In applying the "commercial success" test, 1) evaluate on a case-by-case basis whether commercial success is a valid indicator that the claimed invention is not obvious, and 2) place the burden on the patent holder to prove the claimed invention caused the commercial success.

The Supreme Court has advised that, in some circumstances, courts may consider the commercial success of a claimed invention to indicate that it was not obvious. For example, in some cases early in the twentieth century, courts found the commercial success of an invention that satisfied a long-felt need that had resisted the efforts of others to solve the problem tended to show the claimed invention was not obvious.

Commercial success can result from many factors, however, some of which have nothing to do with the claimed invention. For example, marketing, advertising, or an incumbent's unique advantages may cause commercial success. An undue reliance on commercial success to show nonobviousness can raise a number of competitive concerns. Commercially successful inventions may be more likely than others to occur even without the prospect of a patent. Patents on commercially successful products are more likely to confer market power than those on less successful products.

Certain patent experts and other Hearings participants expressed concern that courts and juries sometimes fail to use a sufficiently searching inquiry when they conclude that commercial success demonstrates a claimed invention is not obvious. Under current standards, if the patent holder shows that the claimed features of the patent are coextensive with those of a successful product, then it is presumed that the invention – rather than other factors – caused the commercial success. The burden shifts to the challenger to present evidence to rebut that presumption.[40]

This test fails to ask, first, whether factors other than the invention may have caused the commercial success. By contrast, the PTO properly requires that commercial success be "directly derived from the invention claimed" and not the result of "business events extraneous to the merits of the claimed invention."[41] Second, the judicial standard too easily shifts the burden to the challenger. The patent holder is the best source of information on what has caused the commercial success of its product and should be required to show that, in fact, the claimed invention caused the commercial success.

b. In applying the "suggestion" test, assume an ability to combine or modify prior art references that is consistent with the creativity and problem-solving skills that in fact are characteristic of those having ordinary skill in the art.

If the prior art already would have suggested the claimed invention, then the

---

[40] *See* HARMON, PATENTS AND THE FEDERAL CIRCUIT at 169-70.

[41] MPEP § 716.03(b).

claimed invention is obvious. If not, then the claimed invention is not obvious. The "suggestion test" thus asks a helpful question – that is, to what extent would the prior art "have *suggested* to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success."[42] The Federal Circuit justifiably has sought to protect inventors from findings of obviousness based purely on hindsight. "Good ideas may well appear 'obvious' after they have been disclosed, despite having been previously unrecognized."[43] The Federal Circuit also has sought to ensure that the PTO provides an administrative record susceptible to judicial review.

Hearings participants expressed concern, however, with some recent applications of the suggestion test. To show that a claimed invention is obvious, some cases seem to require the PTO to point to particular items of prior art that concretely suggest how to *combine* all of the features of a claimed invention. Such an application of the suggestion test may have found that the claimed invention of the Selden patent – that is, putting a gasoline engine on a carriage – was not obvious, because there was no document that suggested that combination. The invention likely was obvious, however; "[e]verybody seemed to know that if you got a new engine of any kind, you would put it on a carriage."[44]

It is important to protect against the issuance of obvious patents that may confer market power and unjustifiably raise costs. Requiring concrete suggestions beyond those actually needed by a person with ordinary skill in the art,[45] and failing to give weight to suggestions implicit from the art as a whole and from the nature of the problem to be solved, is likely to result in patents on obvious inventions and is likely to be unnecessarily detrimental to competition. The Federal Circuit's most recent articulations of the suggestion test seem to signal greater appreciation of these issues and would better facilitate implementation of the test in ways sensitive to competitive concerns.

Recommendation 4:

Provide Adequate Funding for the PTO.

Participants in the Hearings unanimously expressed the view that the PTO lacks the funding necessary to address issues of patent quality. Presidential patent review committees have long advocated more funding for the PTO to allow it to improve patent quality.[46] As recently as 2002, the Patent Public Advisory Committee stated that the PTO "faces a crisis in funding

---

[42] *Brown and Williamson Tobacco Corp. v. Philip Morris*, 229 F.3d 1120, 1124 (Fed. Cir. 2000) (emphasis added).

[43] *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 956 (Fed. Cir. 1997).

[44] Duffy 7/10 at 132-33.

[45] *Cf.* Barr 10/30 at 53-54 (arguing that current obviousness standards fail to reflect the skill of his company's engineers, who "every day" independently invent things that have been deemed nonobvious).

[46] *E.g.,* THE ADVISORY COMMISSION ON PATENT LAW REFORM, REPORT TO THE SECRETARY OF COMMERCE (Aug. 1992), *available at* http://world.std.com/obi/USG/Patents/overview; REPORT OF THE INDUSTRIAL SUBCOMM. FOR PATENT AND INFORMATION POLICY OF THE ADVISORY COMM. ON INDUSTRIAL INNOVATION, REPORT ON PATENT POLICY (1979).

that will seriously impact . . . the quality of . . . issued patents."[47] The FTC strongly recommends that the PTO receive funds sufficient to enable it to ensure quality patent review.

Recommendation 5:

Modify Certain PTO Rules and Implement Portions of the PTO's 21st Century Strategic Plan.

a. Amend PTO regulations to require that, upon the request of the examiner, applicants submit statements of relevance regarding their prior art references.

Some Hearings participants asserted that, far from holding back information, patent applicants tend to provide an examiner with numerous prior art citations, resulting in lots of "information," but little "knowledge."[48] The 2002 version of the PTO's 21st Century Strategic Plan proposed requiring applicants that cited more than 20 prior art references to provide statements to explain the relevance of references, but the PTO has now withdrawn that proposal.[49] The FTC's proposal is more modest than the PTO's original proposal; it would require relevance statements only when the examiner requests them. These statements could materially enhance examiners' ability to provide quality patent examinations by drawing more fully on the patent applicant's knowledge base to identify the most relevant portions of prior art references.

b. Encourage the use of examiner inquiries under Rule 105 to obtain more complete information, and reformulate Rule 105 to permit reasonable follow-up.

PTO Rule 105 permits examiners to request "such information as may be reasonably necessary to properly examine or treat the matter [under examination]."[50] The Commission recommends that the PTO make a concentrated effort to use examiner inquiries more often and more extensively. As one panelist emphasized, "to get better quality and shrink the amount of work," there is a need to seek more knowledge in the possession of applicants, who typically "know more about the technology than the examiner does, and [know] where you might find something that might be relevant."[51] To be fully effective, however, Rule 105 should be amended so that applicants who reply that they do not know the answer to the examiner's inquiry, or that the necessary information "is not readily available to the party or parties from which it was requested" are *not* accepted as a complete reply,[52] as they are now, but rather are treated as responses on which the examiner may follow up.

---

[47] PATENT PUBLIC ADVISORY COMMITTEE, ANNUAL REPORT 6 (Nov. 29, 2002), *available at* http://www.uspto.gov/web/offices/com/advisory/acrobat/ppacannual12-05-02.pdf.

[48] *E.g.,* Kesan 10/25 at 60-61.

[49] United States Patent and Trademark Office 21st Century Strategic Plan*, Mandatory Information Disclosure Statements (IDS)*, P-09 at 3 (June 3, 2002). *See* The 21st Century Strategic Plan, *available at* www.uspto.gov/web/offices/com/strat21/index.htm.

[50] 37 C.F.R. § 1.105.

[51] Kushan 4/11 at 89.

[52] *See* 37 C.F.R. § 1.105.

c. Implement the PTO's recommendation in its 21st Century Strategic Plan that it expand its "second-pair-of-eyes" review to selected areas.

Second-pair-of-eyes review allows the PTO quickly to flag issues that need further attention by the examiner or the examiner's supervisor. The PTO first used this method to improve the quality of business method patents, and it received good reviews from participants in the patent system. The Commission believes that expanding this program to fields with substantial economic importance, such as semiconductors, software, and biotechnology, as well as other new technologies as they emerge, could help to boost patent quality in areas where it will make the most difference.

d. Continue to implement the recognition that the PTO "forges a balance between the public's interest in intellectual property and each customer's interest in his/her patent and trademark."[53]

The PTO functions as a steward of the public interest, not as a servant of patent applicants. The PTO must protect the public against the issuance of invalid patents that add unnecessary costs and may confer market power, just as it should issue valid patents to encourage invention, disclosure, and commercial development.

Recommendation 6:

Consider Possible Harm to Competition – Along with Other Possible Benefits and Costs – Before Extending the Scope of Patentable Subject Matter.

Section 101 of the Patent Act states, "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent."[54] Despite this broad mandate, courts have long held certain types of inventions unpatentable. Traditional common law exceptions include phenomena of nature, abstract intellectual concepts, mental steps, mathematical algorithms with no substantial practical application, printed matter, and, for many years, business methods.

Over the past twenty-five years, however, the scope of patentable subject matter has expanded significantly. For example, the Supreme Court, through two landmark decisions in 1980, held that both man-made, living organisms and computer software constitute patentable subject matter pursuant to Section 101. In 1999, the Federal Circuit ruled that business methods can be patented. Some Hearings participants claimed that patents on computer software and business methods are not necessary to spur the invention, commercial development, or public disclosure of

[53] United States Patent and Trademark Office, *FY2002 Corporate Plan* 28 (2001) (describing role of PTO Under Secretary and Director), *at* http://www.uspto.gov/web/offices/com/corpplan/fy2002/index.html.

[54] 35 U.S.C. § 101.

software or business methods.[55] Others disagreed. Some Hearings participants contended that software and business method patents can raise significant competitive concerns and deter innovation, especially because so much of the innovation in those fields builds incrementally on preceding work. This may raise the potential for thickets of patents to hinder, rather than accelerate, innovation and commercial development.

The constitutional intention that patents "promote the Progress of Science and useful Arts" should be taken into account in interpreting the scope of patentable subject matter under Section 101. Decisionmakers should ask whether granting patents on certain subject matter in fact will promote such progress or instead will hinder competition that can effectively spur innovation. Such consideration is consistent with the historical interpretation of patentable subject matter, which implicitly recognizes that granting patent protection to certain things, such as phenomena of nature and abstract intellectual concepts, would not advance the progress of science and the useful arts. For future issues, it will be highly desirable to consider possible harms to competition that spurs innovation – as well as other possible benefits and costs – before extending the scope of patentable subject matter.

III. Other Patent Laws and Procedures Also Raise Competitive Concerns.

In addition to questionable patents, other portions of the patent system raise competitive concerns. This section briefly describes each issue and the Commission's recommendation(s) to address it.

Recommendation 7:

Enact Legislation to Require Publication of All Patent Applications 18 Months After Filing.

Until relatively recently, patents were published only when issued; patent applications were not published. During the time that would pass between the filing of a patent application and the issuance of a patent, an applicant's competitor could have invested substantially in designing and developing a product and bringing it to market, only to learn, once the patent finally issued, that it was infringing a rival's patent and owed significant royalties. This scenario disrupts business planning, and can reduce incentives to innovate and discourage competition.

A relatively new statute requires that most patent applications – all except those filed only in the United States – be published 18 months after filing. Patent applicants are protected from copying of their inventions by statutory royalty rights, if the patent ultimately issues. This new procedure appears to have increased business certainty and promoted rational planning, as well as reduced the problem of unanticipated "submarine patents" used to hold up competitors for unanticipated royalties. For these reasons, Hearings participants advocated expanding the 18-month publication requirement to include patents filed only domestically, because such

[55] *See generally* Ch. 3. *See also* Robert M. Hunt, *You Can Patent That? Are Patents on Computer Programs and Business Methods Good for the Economy?*, Q1 BUSINESS REVIEW 5, 14 (2001).

patents may well have competitive significance. Protection from copying similar to that already available for other published applications should be extended to those filing domestic patent applications as well, and any necessary protections for independent inventors also should be considered in terms of their likely costs and benefits.

Recommendation 8:

Enact Legislation to Create Intervening or Prior User Rights to Protect Parties from Infringement Allegations That Rely on Certain Patent Claims First Introduced in a Continuing or Other Similar Application.

After publication of its patent application, an applicant may continue to amend its claims. Through this claim amendment process, a patent that states broader claims than those published at 18 months can still emerge. If the applicant uses procedures such as continuing applications to extend the period of patent prosecution, the potential for anticompetitive hold up increases. Indeed, several panelists asserted that some applicants keep continuing applications pending for extended periods, monitor developments in the relevant market, and then modify their claims to ensnare competitors' products after those competitors have sunk significant costs in their products. Patent reform efforts have long focused on how to remedy opportunistic broadening of claims to capture competitors' products.

Legitimate reasons exist to amend claims and use continuing applications. Any proposed remedy for the opportunistic broadening of claims should also protect such legitimate uses. Creating intervening or prior use rights would most directly achieve this balance; it would cure potential competitive problems without interfering with legitimate needs for continuations. Such rights should shelter inventors and users that infringe a patent only because of claim amendments following a continuation or other similar application,[56] provided that the sheltered products or processes are developed or used (or the subject of substantial preparation for use) before the amended claims are published.

Recommendation 9:

Enact Legislation to Require, As a Predicate for Liability for Willful Infringement, Either Actual, Written Notice of Infringement from the Patentee, or Deliberate Copying of the Patentee's Invention, Knowing It to Be Patented.

A court may award up to three times the amount of damages for a defendant's willful infringement of a patent – that is, the defendant knew about and infringed the patent without a reasonable basis for doing so. Some Hearings participants explained that they do not read their competitors' patents out of concern for such potential treble damage liability. Failure to read competitors' patents can jeopardize plans for a noninfringing business or research strategy, encourage wasteful duplication of effort, delay follow-on innovation that could

[56] *See infra* Ch. 4(II)(C)(1) for a description of the types of filings that should be covered.

derive from patent disclosures, and discourage the development of competition.

It is troubling that some businesses refrain from reading their competitors' patents because they fear the imposition of treble damages for willful infringement. Nonetheless, infringers must not be allowed to profit from knowingly and deliberately using another's patented invention due to a low likelihood that the patent holder can afford to bring suit or obtain substantial damages. The FTC's recommendation would permit firms to read patents for their disclosure value and to survey the patent landscape to assess potential infringement issues, yet retain a viable willfulness doctrine that protects both wronged patentees and competition.

Recommendation 10:

Expand Consideration of Economic Learning and Competition Policy Concerns in Patent Law Decisionmaking.

The Supreme Court has made clear in several decisions that there is room for policy-oriented interpretation of the patent laws.[57] Indeed, to find the proper balance between patent and competition law, such policy-oriented interpretations are essential. Over the past twenty-five years, the incorporation of economic thinking into antitrust has provided significant insights that have substantially improved the development of antitrust law and competition policy. The Federal Circuit and the PTO may also benefit from much greater consideration and incorporation of economic insights in their decisionmaking.

IV. The FTC Will Pursue Steps to Increase Communication between Antitrust Agencies and Patent Institutions.

Many Hearings participants expressed concern that the patent and competition communities appear to exist in separate worlds, interacting infrequently at best. Patent practitioners and scholars further expressed concern that patent institutions do not always fully understand or accommodate economic learning or competition concerns. Increased interaction appears desirable to foster better understanding and communication between the patent and competition communities.

The FTC wishes to do its part to improve communication between the competition and patent communities. Accordingly, the FTC will pursue the steps listed below.

A. The FTC Will Increase its Competition Advocacy Role through Filing Amicus Briefs in Appropriate Circumstances.

The Commission will renew its commitment to the filing of amicus briefs in important patent cases that can affect competition, as well as in cases at the intersection of patent and antitrust law. When such cases have high stakes for the public, the Commission can serve the public interest by filing amicus briefs to present its perspectives regarding the implications of certain issues for consumer welfare.

---

[57] *See, e.g., supra* notes 10-12; *Graham v. John Deere Co.,* 383 U.S. 1 (1966).

B. In Appropriate Circumstances, the FTC Will Ask the PTO Director to Reexamine Questionable Patents that Raise Competitive Concerns.

A collective action problem may frustrate business challenges to questionable patents. Instead of challenging a patent's validity, many firms may simply license it, because no single firm has the incentive to finance an expensive legal challenge that would benefit all of the affected firms, not just the challenger. An enforcement agency, however, can consider the cost of a questionable patent to an entire industry and to consumers and can solve this coordination problem. In appropriately narrow circumstances, the FTC will do so.

C. The FTC Will Encourage Increased Communication between Patent Institutions and the Antitrust Agencies.

One means of improving interagency communication would be the establishment of a Liaison Panel between the FTC and the DOJ's Antitrust Division (collectively, the Antitrust Agencies) and the PTO. Such a panel could function as a practical, policy-oriented group designed to permit the exchange of views on important issues as they arise. Another means would be to establish an Office of Competition Advocacy within the PTO. Such an office could, when appropriate, advise PTO policymakers about the likely competitive impact and economic consequences of policy decisions. A final means would be to request that Congress amend the membership categories of the Patent Public Advisory Committee ("P-PAC") to include competition experts and economists.

V. Conclusion

Both patents and competition make significant contributions to innovation, consumer welfare, and our nation's prosperity. We recognize the importance of the patent system; the recommendations in this Report are designed to increase the likelihood that the valid patents are issued and upheld. There is broad consensus on the significant role that these patents can play to spur innovation and to encourage the disclosure and commercial development of inventions.

The importance of competition as a spur to innovation also should be recognized. More patents in more industries and with greater breadth are not always the best ways to maximize consumer welfare. A questionable patent can raise costs and prevent competition and innovation that otherwise would benefit consumers. The FTC looks forward to working closely with the PTO and other patent organizations to increase communication and include all parties in discussion and implementation of the FTC's recommendations.