

19:3 BERKELEY TECHNOLOGY LAW JOURNAL

Symposium on Implementing
Reform of the Patent System

Pages
857
to
1155

Summer
2004

Production: Produced by members of the *Berkeley Technology Law Journal* on PC computers. All editing and layout is done using Microsoft Word.

Printer: Joe Christensen, Inc., Lincoln, Nebraska.
Printed in the U.S.A.
The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Library Materials, ANSI Z39.48—1984.

Copyright © 2004 Regents of the University of California.

All Rights Reserved.

Berkeley Technology Law Journal
University of California, Berkeley
Boalt Hall School of Law
587 Simon Hall
Berkeley, California 94720-7200
(510) 643-6454 (Phone)
(510) 643-6816 (Fax)
btlj@law.berkeley.edu
www.btlj.org

BERKELEY TECHNOLOGY LAW JOURNAL

VOLUME 19

NUMBER 3

SUMMER 2004

TABLE OF CONTENTS

SYMPOSIUM: IDEAS INTO ACTION: IMPLEMENTING REFORM OF THE PATENT SYSTEM

FOREWORD.....	857
By Mozelle W. Thompson and Susan Stark DeSanti	
TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY, EXECUTIVE SUMMARY	861
By The Federal Trade Commission	
OBVIOUS TO WHOM? EVALUATING INVENTIONS FROM THE PERSPECTIVE OF PHOSITA	885
By Rebecca S. Eisenberg	
ALLOCATING POWER OVER FACT-FINDING IN THE PATENT SYSTEM.....	907
By Arti K. Rai	
REFORMING PATENT VALIDITY LITIGATION: THE “DUBIOUS PREPONDERANCE”	923
By Mark D. Janis	
INCENTIVES TO CHALLENGE AND DEFEND PATENTS: WHY LITIGATION WON’T RELIABLY FIX PATENT OFFICE ERRORS AND WHY ADMINISTRATIVE PATENT REVIEW MIGHT HELP	943
By Joseph Farrell and Robert P. Merges	
THE METAMORPHOSIS OF <i>INTER PARTES</i> REEXAMINATION.....	971
By Stephen G. Kunin and Anton W. Fetting	
POST-GRANT REVIEWS IN THE U.S. PATENT SYSTEM—DESIGN CHOICES AND EXPECTED IMPACT	989
By Bronwyn H. Hall and Dietmar Harhoff	
PATENT SYSTEM REFORM: ECONOMIC ANALYSIS AND CRITIQUE.....	1017
By Carl Shapiro	

EDITED TRANSCRIPT OF REMARKS ON PATENT REFORM: REACTION FROM THE
JUDICIARY 1049
By Judge Ronald M. Whyte

EDITED & EXCERPTED TRANSCRIPT OF THE SYMPOSIUM ON IDEAS INTO ACTION:
IMPLEMENTING REFORM OF THE PATENT SYSTEM 1053

DONORS

The *Berkeley Technology Law Journal* acknowledges the following generous donors to Boalt Hall's Law and Technology Program:

Benefactors (\$25,000 and above)

COOLEY GODWARD LLP
San Francisco, CA

LATHAM & WATKINS
San Francisco, CA

FARELLA BRAUN + MARTEL LLP
San Francisco, CA

MILBANK, TWEED, HADLEY &
MCCLOY LLP
Palo Alto, CA

FENWICK & WEST LLP
Palo Alto, CA

SKADDEN, ARPS, SLATE, MEAGHER
& FLOM LLP
Palo Alto, CA

GRAY CARY WARE & FREIDENRICH,
LLP
Palo Alto, CA

WEIL, GOTSHAL & MANGES LLP
Redwood Shores, CA

HELLER EHRMAN WHITE
& MCAULIFFE LLP
San Francisco, CA

WILSON SONSINI GOODRICH &
ROSATI
Palo Alto, CA

Members (\$10,000 to \$24,999)

ALSCHULER GROSSMAN STEIN & KAHAN LLP <i>Los Angeles, CA</i>	KNOBBE, MARTENS, OLSON & BEAR, LLP <i>San Francisco, CA</i>
BINGHAM MCCUTCHEN <i>San Francisco, CA</i>	MAYER, BROWN, ROWE & MAW <i>Palo Alto, CA</i>
COVINGTON & BURLING <i>San Francisco, CA</i>	MCDERMOTT, WILL & EMERY <i>Menlo Park, CA</i>
DAVIS POLK & WARDWELL <i>Menlo Park, CA</i>	MORGAN, LEWIS & BOCKIUS LLP <i>San Francisco, CA</i>
DAY CASEBEER MADRID & BATCHELDER LLP <i>Cupertino, CA</i>	MORRISON & FOERSTER LLP <i>San Francisco, CA</i>
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP <i>Palo Alto, CA</i>	O'MELVENY & MYERS LLP <i>San Francisco, CA</i>
FISH & RICHARDSON P.C. <i>Redwood City, CA</i>	ORRICK, HERRINGTON & SUTCLIFFE LLP <i>San Francisco, CA</i>
GIBSON, DUNN & CRUTCHER LLP <i>Palo Alto, CA</i>	PILLSBURY WINTHROP LLP <i>San Francisco, CA</i>
KIRKLAND & ELLIS <i>San Francisco, CA</i>	RITTER, LANG & KAPLAN <i>Saratoga, CA</i>
	TOWNSEND AND TOWNSEND AND CREW LLP <i>San Francisco, CA</i>

Patrons (\$5,000 to \$9,999)

BAKER & MCKENZIE <i>Palo Alto, CA</i>	KEKER & VAN NEST LLP <i>San Francisco, CA</i>
DEWEY BALLANTINE LLP <i>Palo Alto, CA</i>	KENYON & KENYON <i>San Jose, CA</i>
FISH & NEAVE <i>Palo Alto, CA</i>	MANATT, PHELPS & PHILLIPS LLP <i>Palo Alto, CA</i>
HOWREY SIMON ARNOLD & WHITE LLP <i>Menlo Park, CA</i>	MUNGER, TOLLES & OLSON <i>San Francisco, CA</i>
IRELL & MANELLA LLP <i>Century City, CA</i>	VAN PELT & YI LLP <i>Cupertino, CA</i>

The *Berkeley Technology Law Journal* is a nonprofit organization and welcomes donations. Donors are recognized appropriately for their contributions. For more information, contact the Development Editor, *Berkeley Technology Law Journal*, 587 Simon Hall, Boalt Hall School of Law, University of California, Berkeley, California 94720, (510) 643-6454, or e-mail btlj@law.berkeley.edu.

ADVISORY BOARD

ROBERT C. BERRING, JR.
Walter Perry Johnson Professor of Law
Boalt Hall School of Law
Berkeley, California

ROGER BOROVOY
Fish & Richardson P.C.
Redwood City, California

JESSE H. CHOPER
Earl Warren Professor of Public Law
Boalt Hall School of Law
Berkeley, California

BRIAN C. CUNNINGHAM
Cooley Godward LLP
Palo Alto, California

MARK A. LEMLEY
*Professor of Law and Faculty Scholar &
Director of the Stanford Center for Law,
Science & Technology*
Stanford Law School
Palo Alto, California

REGIS MCKENNA
Chairman & CEO
Regis McKenna, Inc.
Palo Alto, California

PETER S. MENELL
*Professor of Law &
Executive Director of Berkeley Center for
Law & Technology*
Boalt Hall School of Law.
Berkeley, California

ROBERT P. MERGES
*Wilson Sonsini Goodrich & Rosati
Professor of Law & Technology &
Director of Berkeley Center for Law &
Technology*
Boalt Hall School of Law
Berkeley, California

MATTHEW D. POWERS
Weil, Gotshal & Manges LLP
Redwood Shores, California

DIANE WILKINS SAVAGE
Cooley Godward LLP
Palo Alto, California

LARRY W. SONSINI
Wilson Sonsini Goodrich & Rosati
Palo Alto, California

MICHAEL TRAYNOR
Cooley Godward LLP
San Francisco, California

THOMAS F. VILLENEUVE
Gunderson, Dettmer, Stough,
Villeneuve, Franklin & Hachigian, LLP
Menlo Park, California

SUBSCRIBER INFORMATION

The *Berkeley Technology Law Journal* (ISSN 1086-3818), a continuation of the *High Technology Law Journal* effective Volume 11, is edited and published four times each year (Spring, Summer, Fall, and Annual Review of Law and Technology) by the students of Boalt Hall School of Law, University of California, Berkeley. Application to Mail at Periodicals Postage Rate is Pending at Berkeley, California, and at additional mailing offices. POSTMASTER: Send address changes to Journal Publications Coordinator, Boalt Hall School of Law, 421 North Addition, University of California, Berkeley, CA 94720-7200.

Correspondence. Address all correspondence regarding subscriptions, address changes, claims for nonreceipt, single copies, advertising, and permission to reprint to Journal Publications Coordinator, Boalt Hall School of Law, 421 North Addition, Berkeley, CA 94720-7200; (510) 643-6600; journalpublications@law.berkeley.edu. Authors: see section entitled Information for Authors.

Subscriptions. Annual subscriptions are \$65.00 for individuals, and \$85.00 for organizations. Single issues are \$27.00. Please allow two months for receipt of the first issue. Payment may be made by check, international money order, or credit card (MasterCard/Visa). Domestic claims for nonreceipt of issues should be made within 90 days of the month of publication; overseas claims should be made within 180 days. Thereafter, the regular back issue rate (\$27.00) will be charged for replacement. Overseas delivery is not guaranteed.

Form. The text and citations in the *Journal* conform generally to the UNITED STATES GOVERNMENT PRINTING OFFICE STYLE MANUAL (28th ed. 1984) and to THE BLUEBOOK: A UNIFORM SYSTEM OF CITATION (Columbia Law Review Ass'n et al. eds., 17th ed. 2000). Please cite this issue of the *Berkeley Technology Law Journal* as 19 BERKELEY TECH. L.J. ____ (2004).

BTLJ ONLINE

Abstracts of all *Berkeley Technology Law Journal* and *High Technology Law Journal* articles as well as the full text of most articles published in previous issues can be found at <http://www.btlj.org>. Our site also contains subject, author and title indexes, general information about the *Journal*, selected materials related to technology law, and links to other related home pages. Subject, author and title indexes may also be found in Volume 10, Number 2 (1995) of the *Journal*.

INFORMATION FOR AUTHORS

The Editorial Board of the *Berkeley Technology Law Journal* invites the submission of unsolicited manuscripts. Submissions may include previously unpublished articles, essays, book reviews, case notes, or comments concerning any aspect of the relationship between technology and the law. If any portion of a manuscript has been previously published, the author should so indicate.

Format. Authors should submit double-spaced, single-sided manuscripts with generous margins. We regret that submissions cannot be returned. Authors should retain an exact copy of any material submitted. Authors may submit manuscripts in electronic or hardcopy form, though electronic submissions are strongly encouraged. Electronic submissions should be sent as attachments in Microsoft Word format to btlj@law.berkeley.edu.

Citations. All citations should conform to THE BLUEBOOK: A UNIFORM SYSTEM OF CITATION (Columbia Law Review Ass'n et al. eds., 17th ed. 2000). In addition, the author should include his or her credentials, including full name, degrees earned, academic or professional affiliations, and citations to all previously published legal articles.

Copyrighted Material. If a manuscript contains any copyrighted table, chart, graph, illustration, photograph, or more than eight lines of text, the author must obtain written permission from the copyright holder for use of the material. A photocopy of such written permission should accompany the submission.

Mailing Address. Please submit all hardcopy manuscripts to:

Submissions Editor
Berkeley Technology Law Journal
University of California, Berkeley
Boalt Hall School of Law
587 Simon Hall
Berkeley, California 94720
(510) 643-6454 (Phone)

BOARD OF EDITORS

2003-2004

Editor-in-Chief

TITI NGUYEN

Managing Editor

JOSEPH MARRA

Senior Article Editors

JULIETA LERNER

MARC SHARP

Senior Executive Editor

MATTHEW HOLOHAN

Senior Annual Review Editors

BRIAN PAUL GEARING

ELIZABETH MILES

Submissions Editors

ANDREA FREEMAN

AARON PERZANOWSKI

Production Editor

NATALIA THURSTON

Symposium Editors

ANNA LEE

GEMMA SUH

Article Editors

TOMOMI HARKEY

CHARLES HUSE

CAROL JOHNS

CHARLENE KON

OLGA KOTLYAREVSKAYA

CHRISTEN LEE

SUNNY LU

KATIE NOLAN-STEVAUX

KATHERINE OYAMA

RICHARD R. RONALD

Executive Editors

DANIEL CASTRO

DEAN CHELEY

EUGENE CHOO

RYAN GILFOIL

TERESA HUANG

KRISTOFFER MAYFIELD

LON SORENSEN

RANGANATH SUDARSHAN

TARA WHEATLAND

Submissions Committee

CYNTHIA CHEN

JAMIE MCELYEA

FOREWORD

By Mozelle W. Thompson[†] and Susan Stark DeSanti[‡]

The Symposium on *Ideas into Action: Implementing Reform in the Patent System* laid the groundwork for high-technology companies, academics, legal practitioners, and government representatives to work for changes in the patent system that will benefit innovation and competition.¹ The pieces in this issue of the *Berkeley Technology Law Journal* help to memorialize this symposium, one that many recognize as a watershed event for the future of American innovation, and provide valuable insight and analysis about the existing patent system and the opportunities for reform. The ideas drawn from the symposium and the pieces, together with cooperative action by the symposium participants, will significantly influence the future of innovation in the United States.

Innovation has historically played a central role in the United States economy, spurring growth and providing consumers with a variety of high-quality, low-cost products and services. No one is more aware of that than West Coast high-technology businesses that have innovated—and thereby changed markets—as significantly and as swiftly as at any time in the world’s history. One of the most critical issues facing America is how it will maintain its position as a world leader in innovation, for innovation is essential to a thriving national economy and to consumer welfare.

Competition and patents stand out among the federal policies that influence innovation. Both competition and patents 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

[†] Commissioner, Federal Trade Commission. These remarks reflect my own views and not necessarily those of the Federal Trade Commission or any other Commissioner.

[‡] Deputy General Counsel for Policy Studies, Federal Trade Commission. These remarks reflect my own views and not necessarily those of the Federal Trade Commission or any Commissioner.

1. The Federal Trade Commission, the National Academy of Sciences, the Berkeley Center for Law and Technology, and the *Berkeley Technology Law Journal* were among many who sponsored the Symposium on *Ideas into Action: Implementing Reform of the Patent System*. A full transcription of the conference may be found at <http://www.ftc.gov/ftc/workshops.htm> or at <http://www.law.berkeley.edu/institutes/bclt/patentreform/schedule.html>, while an edited version may be found at *Edited & Excerpted Transcript of the Symposium on Ideas into Action: Implementing Reform of the Patent System*, 19 BERKELEY TECH. L.J. 1053 (2004).

harm another policy's effectiveness. A failure to strike the proper balance between competition and patent law and policy can harm innovation.

These observations owe a great deal to the lengthy history that preceded this symposium, as well as to the articles presented in this Issue. Many far-sighted academics, including many of the authors in this Issue, have brought crucial insights to intellectual property law and policy for more than a decade. Applying stringent analytical and empirical techniques, economics, and the basic principles of intellectual property law, these academics have shown new ways to assess when patent and copyright laws promote and protect innovation—and when they do not. The sophisticated analyses exemplified by this Issue have enriched our understanding of the interaction among innovation, intellectual property protection, and competition.

As academics studied these issues, high-technology businesses lived them. These businesses have witnessed both the promise and the problems of patents. Through technological breakthroughs and shifting business paradigms, these businesses have searched for new paths toward ongoing innovation and competition within ever more complex and overlapping patent landscapes. An increasing number of these businesses tell us that the task has become overwhelming and that, even with diligence and resourcefulness, they cannot identify all of the patents potentially relevant to their existing business and to areas in which they are considering to innovate. Even more problematic, these businesses also had difficulty in assessing with certainty the validity or non-infringement of the patents they do identify as potentially relevant.

The Federal Trade Commission (FTC) began examining these issues through hearings in 1995, leading to a 1996 FTC Staff Report, *Competition Policy in the New High-Tech, Global Marketplace*, which discussed the relationship among competition, innovation, and intellectual property, among other things.² Enforcement matters over the next several years extended the FTC's understanding of the role of patents in competition.³

2. FED'L TRADE COMM'N, ANTICIPATING THE 21ST CENTURY: COMPETITION POLICY IN THE NEW HIGH-TECH, GLOBAL MARKETPLACE (1996), available at http://www.ftc.gov/opp/global/report/gc_v1.pdf.

3. *In re Dell Computer Co.*, No. 982 3563 (Fed. Trade Comm'n May 13, 1999) (Agreement Containing Consent Order), available at http://www.ftc.gov/os/1999/05/dell_agreement.htm; *In re Intel Co.*, No. 9288 (Fed. Trade Comm'n Mar. 17, 1999) (Agreement Containing Consent Order), available at http://www.ftc.gov/os/1999/03/d09288_intelagreement.htm; Press Release, Federal Trade Commission, FTC Seeks to Block Cytoc Corp.'s Acquisition of Digene Corp. (June 24, 2002), available at http://www.ftc.gov/opa/2002/06/cytc_digene.htm.

In 2001, the FTC, together with the Antitrust Division of the Department of Justice, commenced broad, in-depth hearings on the relationships among innovation, patents, and competition. Significantly, the first full week of hearings took place in Berkeley, California, with representatives from leading high-technology businesses, academics, independent inventors, and patent and antitrust practitioners. The hearings continued in Washington, D.C., ultimately involving more than 300 panelists and producing over 100 written submissions.

Those hearings revealed a broad consensus that the patent system would benefit from reforms designed to reduce the number of questionable patents. The FTC's 2003 report, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*, made specific recommendations for such reforms.⁴ Six months later, the National Academy of Sciences (NAS) issued a report, *A Patent System for the 21st Century*, that reached similar conclusions and recommended similar, although not identical, solutions.⁵ In an interesting development that reflects the consensus that patent reforms are needed, both the American Intellectual Property Law Association (AIPLA) and the Intellectual Property Owners Association (IPO) have endorsed some, but not all, of the proposed reforms.⁶ Their reaction suggests that patent reform will be on the legislative agenda in 2005.

As we move forward, two questions confront us. First, how do we take this compilation of bright ideas and keen insights about patent law and process and turn them into something more meaningful for innovation and the U.S. economy? Second, how do we capitalize on this opportunity to make the patent system accommodating to the world we see today, especially in information-technology and biotechnology industries? Achieving these positive outcomes will take more than recommendations from the

4. FED. TRADE COMM'N, *TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY* (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

5. NAT'L ACAD. OF SCIS., *A PATENT SYSTEM FOR THE 21ST CENTURY* (Stephen A. Merrill et al. eds., forthcoming 2004), available at <http://www.nap.edu/books/0309089107/html>.

6. American Intellectual Property Law Association, *AIPLA Response to the October 2003 Federal Trade Commission Report: "To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy"* (Apr. 21, 2004), at http://www.aipla.org/Cotent/ContentGroups/Issues_and_Advocacy/Comments2/Patent_and_Trademark_Office/2004/ResponseToFTC.pdf; Intellectual Property Owners Association, *Summary of IPO Position on Federal Trade Commission (FTC) Report* (July 8, 2004), at http://www.ipo.org/Template.cfm?Section=IPO_Position_Statements&Template=TaggedPage/TaggedPageDisplay.cfm&TPLID=14&ContentID=8239.

FTC and the NAS, despite their importance as focal points for discussion and debate.

We have four suggestions:

- *Create an organized, continuing voice.* The information-technology and biotechnology industries and academia should work to create their own voice in favor of reforming and improving the U.S. patent system.
- *Create an ongoing policy resource.* To understand how patents are used in information-technology and biotechnology markets, policymakers need ongoing information from participants in those markets.
- *Continue the movement.* This symposium revealed a consensus among West Coast high-technology industries, academia, and legal practitioners that patent reform should occur. To capitalize on this start, we must find mechanisms for ongoing dialogue, so that consensus can be reached on specific areas of patent reform. Without this, different perspectives and ideas may be left behind in the next round of patent reform.
- *Talk to the public about your industry, innovation, and patent reform.* Those who attended this symposium understand the importance of a patent system that works well to promote, not frustrate, innovation in the context of rapidly changing, high-tech markets. But the public does not necessarily understand your company, its innovation, or why patent reform can benefit the U.S. economy and consumers.

We believe these suggestions are doable. Indeed, at the end of this conference, a core group of leading technology companies agreed there is an opportunity to make the patent system more attuned with the technology innovation of today. Chiron, Cisco, E-Bay, Genentech, Google, Intel, Microsoft, and Symantec have agreed to continue discussion among themselves, academia, and policymakers about the proposals for patent reform debated at this symposium. With these companies' commitment, we believe that patent reform is off to a good start.

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.

* FED'L TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY, EXECUTIVE SUMMARY (2003), available at <http://www.ftc.gov/os/2003/10/innovationrptsummary.pdf>. The *Executive Summary* is reprinted here as background material to the articles and transcript included in this issue, Symposium, *Ideas into Action: Implementing Reform of the Patent System*, 19 BERKELEY TECH. L.J. 857 (2004). With the exception of changing the format from dual column to single column, the *Executive Summary* has been reproduced exactly as it appears in the FTC's publications.

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).

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 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 scien-

3. I Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law : An Analysis of Antitrust Principles and Their Application* ¶ 100a at 4 (2000).

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

tific 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 anti-trust 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 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

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.”).

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.

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 encompass[ed] 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.

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>.

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 economics and antitrust and patent law.¹³ The Commission wishes to note the expertise and time contributed by Hearings participants. For all of their contributions, the Commission conveys its thanks. 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.

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.

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.

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 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

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.

18. Blackburn 2/26 at 295-96.

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 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.

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.

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>.

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 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

24. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 Nw. L. Rev. 1495, 1497 (2001).

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.

against the possibility of competitors harrasing 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.

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

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

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

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).

year.³² With yearly applications approximating 300,000, 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 art³⁷ are such that “the subject matter as a whole

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>.

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.

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—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—

38. 35 U.S.C. § 103.

39. See Merges & Duffy, Patent Law and Policy: Cases and Materials at 644.

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 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 obvi-

40. See Harmon, Patents and the Federal Circuit at 169-70.

41. MPEP § 716.03(b).

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).

ous, 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 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.

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).

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>.

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

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.

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.

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 phe-

52. See 37 C.F.R. § 1.105.

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.

nomena 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 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.

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).

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 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 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.

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

Recommendation 10:**Expand Consideration of Economic Learning and Competition Policy Concerns in Patent Law Decision-making.**

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.

OBVIOUS TO WHOM? EVALUATING INVENTIONS FROM THE PERSPECTIVE OF PHOSITA

By Rebecca S. Eisenberg[†]

TABLE OF CONTENTS

I. INTRODUCTION	885
II. THE DIMINISHED ROLE OF PHOSITA IN JUDICIAL DECISIONS	889
III. WHAT PHOSITA KNOWS	897
IV. CONSULTING PHOSITA	899
V. CONCLUSION	905

I. INTRODUCTION

The “nonobviousness” standard determines how much an invention must differ from the prior art in order to qualify for a patent.¹ In theory, this standard prevents issuance of patents on inventions that, although new, are so close to the prior art that they are likely to be forthcoming even without patent incentives.² Section 103 of the Patent Act articulates the basic standard as follows:

© 2004 Rebecca S. Eisenberg

[†] Robert & Barbara Luciano Professor of Law, University of Michigan Law School. I am grateful to Marty Adelman, Robert Cook-Deegan, Rochelle Dreyfuss, John Duffy, Stephen Kunin, Mark Lemley, Ronald Mann, Ted Parson, Bhaven Sampat, James Toupin, and participants in *Ideas into Action: Implementing Reform of the Patent System* for helpful comments and suggestions.

1. Many legal scholars have written about the nonobviousness standard. See Martin J. Adelman, *The New World of Patents Created by the Court of Appeals for the Federal Circuit*, 20 U. MICH. J.L. REFORM 979 (1987); John H. Barton, *Non-Obviousness*, 43 IDEA 475 (2003); Edmund W. Kitch, *Graham v. John Deere Co.: New Standards for Patents*, 1966 SUP. CT. REV. 293; Glynn S. Lunney, Jr., *E-Obviousness*, 7 MICH. TELECOMM. & TECH. L. REV. 363 (2000-01); Robert P. Merges, *Commercial Success and Patent Standards: Perspectives on Innovation*, 76 CALIF. L. REV. 805 (1988); Robert P. Merges, *Uncertainty and the Standard of Patentability*, 7 HIGH TECH. L.J. 1 (1993); Cecil D. Quillen, Jr., *Proposal for the Simplification and Reform of the United States Patent System*, 21 AIPLA Q.J. 189 (1993).

2. *Graham v. John Deere Co.*, 383 U.S. 1, 11 (1965) (“The inherent problem was to develop some means of weeding out those inventions which would not be disclosed or devised but for the inducement of a patent.”); see also Kitch, *supra* note 1, at 301 (“The non-obviousness test makes an effort, necessarily an awkward one, to sort out those innovations that would not be developed absent a patent system.”). Lunney writes:

Ideally, under this view, a patent should be given for an invention only if the invention would not have been developed but for the patent. If the claimed invention would have been developed, commercialized, and

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art 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 to which said subject matter pertains.³

Read for plain meaning, this language seems to call for evaluations of nonobviousness from the perspective of ordinary practitioners who are contemporaries of the inventor in the relevant technological community. It specifies a point in time as of which the obviousness of the invention should be evaluated (“at the time the invention was made”) and designates the person whose judgment of obviousness should control (“to a person having ordinary skill in the art to which said subject matter pertains” or PHOSITA), as well as directing attention to “the differences between the subject matter sought to be patented and the prior art.”⁴

If the point of the nonobviousness requirement is to distinguish patent-worthy inventions from routine advances that do not require the incentive of a patent, this is a sensible frame of reference. An invention that seems obvious at the time it was made to ordinary practitioners in the technological community is likely to occur promptly to others with or without the inventor’s efforts, and the legislative choice to exclude such slight advances from patent protection seems to be a reasonable rule of thumb.⁵ Otherwise, consumers would endure unnecessary restrictions on competition in new technologies and competitors would feel compelled to waste resources racing to make and patent modest incremental advances for fear of being foreclosed by the patents of others from doing what comes easily

disclosed even without a patent, then granting or enforcing a patent would make little sense.

Lunney, *supra* note 1, at 365-66.

3. 35 U.S.C. § 103 (2000).

4. *Id.* § 103.

5. One criticism of this technological approach to patentability is that it ignores research and development costs, which might deter investment in making even technologically obvious inventions. *Cf.* Barton, *supra* note 1, at 496 (proposing adjusting the standard for nonobviousness “to grant a patent only if the invention is more substantial than that regularly made by a person of average skill in the art being funded and supported in a way that is typical in the relevant industry”).

to their own scientists and engineers.⁶ But the implementation of such a standard poses certain administrative challenges.

There are two main difficulties. One difficulty, much remarked by the Court of Appeals for the Federal Circuit, concerns the time frame for making the statutory determination. An invention that was in fact nonobvious at the time it was made might nonetheless appear obvious by the time it is evaluated for patentability some years later, especially to those who have read the inventor's disclosure.⁷ This concern about the corruption of judgments of nonobviousness by improper "hindsight" is a strong theme in Federal Circuit opinions.⁸ Another difficulty that has received far less attention is how to gain access to the perspective of ordinary practitioners in the field of the invention. An invention that seems obvious to a person having ordinary skill in the field might nonetheless seem patentworthy to a person who lacks such skill, even after reading the prior art record.

These two problems in the hypothetical frame of reference for making determinations of patentability—the problem of timing and the problem of skill level—are often conflated in judicial opinions. For example, in rejecting the contention that the trial court committed error by failing to make specific findings on the level of skill in the art, the Federal Circuit observed in *Kloster Speedsteel AB v. Crucible, Inc.*:

The primary value in the requirement that level of skill be found lies in its tendency to focus the mind of the decisionmaker away from what would *presently* be obvious to that decisionmaker and toward what would, *when the invention was made*, have been

6. As explained by one experienced patent professional: "At the end of the day everyone has more patents and no one has gained an advantage. All have found it necessary to incur higher costs." Quillen, *supra* note 1, at 195.

7. See generally Jeffrey J. Rachlinski, *A Positive Psychological Theory of Judging in Hindsight*, 65 U. CHI. L. REV. 571 (1998) (reviewing literature from cognitive psychology that shows tendency of people to exaggerate, with the benefit of hindsight, what could have been anticipated in foresight, and considering the implications of this "hindsight bias" in specific legal contexts).

8. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1369 (Fed. Cir. 2000) ("A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field."); *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999) ("Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention . . .").

obvious, as the statute requires, “to one of ordinary skill in the art.”⁹

In this understanding, the statutory admonition to consider nonobviousness from the perspective of PHOSITA provides an additional safeguard against hindsight and works in tandem with the admonition to evaluate nonobviousness at the time the invention was made. But the problem of making determinations of nonobviousness from the perspective of a skilled practitioner is distinct from the problem of hindsight, and presents a very different risk. The risk posed by evaluating obviousness at a later date rather than “at the time the invention was made” is that the bar will be set too high. The risk posed by assigning the evaluation to a decision-maker who does not have ordinary skill in the art is that the bar will be set too low.

While the Federal Circuit has actively scrutinized obviousness determinations to detect and correct any “hindsight” bias, it has all but ignored the statutory directive that judgments of nonobviousness be made from the perspective of PHOSITA. Today, PHOSITA sits on the sidelines of obviousness analysis. Courts consult PHOSITA on the scope, content and meaning of prior art references but not on the ultimate question of whether the invention would have been obvious at the time it was made in light of the prior art. The resulting analysis excludes from consideration the judgment, intuition and tacit knowledge of ordinary practitioners in the field that cannot be documented in the written record. The written record understates the technological know-how that active practitioners bring to bear upon a problem, particularly in fields of industrial technology that offer few incentives to publish.

The technological skill of patent examiners may provide a proxy for the tacit knowledge of PHOSITA, but examiners are at best former practitioners whose practical technological skills inevitably decline with time. Moreover, the Federal Circuit actively discourages examiners from relying on their own technological skill in evaluating inventions, reprimanding them for failing to document the basis for decisions that explicitly rest upon their own common sense.¹⁰

9. 793 F.2d 1565, 1574 (Fed. Cir. 1986) (emphasis added) (citations omitted); *see also* Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 1324 (Fed. Cir. 1999) (“[T]he level of skill in the art is a prism or lens through which a judge or jury views the prior art and the claimed invention. This reference point prevents these deciders from using their own insight or, worse yet, hindsight, to gauge obviousness.”).

10. *In re Lee*, 277 F.3d 1338, 1345 (Fed. Cir. 2002) (“‘Common knowledge and common sense,’ even if assumed to derive from the agency’s expertise, do not substitute for authority when the law requires authority.”) (citation omitted); *In re Zurko*, 258 F.3d

In this Article, I consider the possibility of giving the USPTO input from currently active technological practitioners in evaluating the obviousness of claimed inventions. Such input could potentially serve three useful functions. First, it could improve the accuracy of USPTO decision-making by providing access to the perspective of actual practitioners as to the obviousness of inventions from the perspective of the hypothetical PHOSITA. Second, it could help the USPTO document the evidentiary basis for rejections that rest in part upon tacit knowledge within technological communities. Third, it could provide a quality control mechanism that would improve the credibility of USPTO decisions as to what is obvious. This mechanism should provide timely advice in a cost-effective manner while minimizing risks of bias and conflict of interest.

II. THE DIMINISHED ROLE OF PHOSITA IN JUDICIAL DECISIONS

Judicial decisions have assigned a far lesser role to PHOSITA in evaluating nonobviousness than one might expect from parsing the language of the statute. Courts have marginalized the role of PHOSITA by presuming that PHOSITA is incapable of innovation and by treating determinations of nonobviousness as conclusions of law.¹¹ They have further marginalized PHOSITA's role by enhancing the relevance of nontechnological evidence of nonobviousness,¹² by requiring evidence of "suggestion" to combine references from the prior art to establish obviousness,¹³ and by reversing rejections that rely on "common sense" rather than explicit documentation in prior art. Rather than turning to PHOSITA for a skilled appraisal of what would have been obvious at the time the invention was made, courts simply invoke PHOSITA's understanding to determine what the prior art references disclose and suggest, making the ultimate determination of nonobviousness themselves. This approach has left

1379, 1386 (Fed. Cir. 2001) ("The Board cannot simply reach conclusions based on its own understanding or experience—or on its assessment of what would be basic knowledge or common sense."); *In re Rouffet*, 149 F.3d 1350, 1358 (Fed. Cir. 1998) (rejecting Board's conclusion because it failed to "explain the specific understanding or principle").

11. *Aktiebolaget Karlstads Mekaniska Werkstad v. U.S. Int'l Trade Comm'n*, 705 F.2d 1565, 1575 (Fed. Cir. 1983) ("Obviousness is a legal conclusion based on factual determinations and not a factual determination itself.") (citation omitted).

12. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 667 (Fed. Cir. 2000) ("Evidence of secondary considerations may often be the most probative and cogent evidence in the record.") (quoting *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983)).

13. *Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 728 (Fed. Cir. 2002); *SIBIA Neurosciences, Inc. v. Cadus Pharm. Corp.*, 225 F.3d 1349 (Fed. Cir. 2000).

the courts with considerable room for active judicial review. The Federal Circuit has deployed judicial review in ways that make it harder to establish nonobviousness, diminish the role of nonobviousness in limiting what may be patented, and reduce the threat of patent invalidity. In the process, it has arguably disregarded the statutory language and permitted the issuance of patents on routine advances within easy reach of technological practitioners of ordinary skill.

In *Graham v. John Deere Co.*, the U.S. Supreme Court included the level of ordinary skill in the art in its enumeration of “several basic factual inquiries” to be made in the course of applying the statutory standard:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.¹⁴

Yet in its own application of the standard, the Court simply compared the prior art to the claimed inventions and offered its own assessment of obviousness with no further reference to the skill level of PHOSITA.¹⁵ Subsequent lower court decisions, while noting that *Graham* calls for explicit factual findings as to skill level, have treated the failure to make such findings as harmless error.¹⁶

Although the Federal Circuit continues to recite the level of ordinary skill as one of the necessary findings to be made in applying the nonobviousness standard, and even acknowledges explicit findings as to skill level in the USPTO and the District Courts,¹⁷ these findings seem to do little work in guiding its own review of the ultimate conclusion as to patentability. Instead, the Federal Circuit has generally focused on the prior art references themselves, consulting the perspective of PHOSITA only to de-

14. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1965).

15. Nor did the Court appear to rely on any findings concerning the level of ordinary skill in the art in its evaluation of the obviousness of the inventions at issue in its subsequent decisions in *Anderson's Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969), *Dann v. Johnston*, 425 U.S. 219 (1976), and *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976). See 2 DONALD S. CHISUM, CHISUM ON PATENTS § 5.03[4][a] (2004).

16. *E.g.*, *Okajima v. Bourdeau*, 261 F.3d 1350, 1354, 1356 (Fed. Cir. 2001) (noting factual inquiries described by *Graham* but finding “no legal error in the absence of specific findings as to the level of ordinary skill”); *Contico Int'l, Inc. v. Rubbermaid Commercial Prod., Inc.*, 665 F.2d 820, 824 n.9 (8th Cir. 1981); *Whitley v. Road Corp.*, 624 F.2d 698 (5th Cir. 1980).

17. *E.g.*, *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000) (agreeing with district court's finding on education and experience level of PHOSITA).

termine what those references would reveal and suggest to a trained reader rather than to illuminate whether the invention would have seemed obvious to such a person.¹⁸

One reason for this diminished role for PHOSITA is a judicial presumption, with little if any support in the statutory language, that PHOSITA is an uncreative plodder, incapable of making inventions of his own. This presumption was frankly stated by the late Judge Rich in *Standard Oil Co. v. American Cyanamid Co.*:

The statutory emphasis is on a person of *ordinary* skill, and one should not go about determining obviousness under § 103 by inquiring into what *patentees* (*i.e.*, inventors) would have known or would likely have done, faced with the revelations of references. A person of ordinary skill in the art is also presumed to be one who thinks along the line of conventional wisdom in the art and is not one who undertakes to innovate, whether by patient, and often expensive, systematic research or by extraordinary insights, it makes no difference which.¹⁹

This reading of the statute, which implies that patentees necessarily possess more than ordinary skill, inverts the relationship between the skill of PHOSITA and the standard of nonobviousness from the reading set forth in the introduction to this article. To Judge Rich, the skill of PHOSITA

18. *E.g.*, *In re Rouffet*, 149 F.3d 1350, 1359 (Fed. Cir. 1998) (stating that the USPTO Board did not err in relying on “lofty skill level” in the art to find that references would be understood to disclose all of the elements of the claimed invention, but reversibly erred in relying upon the high level of skill in the art to provide the necessary motivation to combine the references).

19. 774 F.2d 448, 454 (Fed. Cir. 1985). Judge Rich sometimes invoked his past role as a drafter of the statutory language in support of his own interpretations of the language of the Patent Act. *E.g.*, *Paulik v. Rizkalla*, 760 F.2d 1270, 1276 (Fed. Cir. 1985) (Rich, J., concurring). Judge Rich stated in *Paulik*:

I write in order to express some additional thoughts respecting 35 U.S.C. § 102(g) as a member of the group which drafted that section. . . . In my view, considering what I know to have been the intent of [§ 102(g) of the Patent Act], it has been thoroughly misapplied by the board and the dissent here . . . by applying to § 102(g) a kind of stultifying literalism . . . misconstruing a section which was intended to be merely a codification of preexisting case law precedents

Id. (Rich, J., concurring). See generally Giles S. Rich, *Congressional Intent—Or, Who Wrote the Patent Act of 1952?*, in SOUTHWESTERN LEGAL FOUNDATION, PATENT PROCUREMENT AND EXPLOITATION: PROTECTING INTELLECTUAL RIGHTS 61, 78 (1963) (quoting a member of the patent subcommittee that held hearings on the Patent Act for the proposition that Judge Rich and the other drafters of the statute “far more than any member of the House or Senate, knew and understood what was intended by the language used”).

does not establish a floor for patentable inventions; rather, it is the legal standard for patentability that sets a ceiling for the skill level of PHOSITA. If practitioners in a particular field tend to be innovative (or, for that matter, to get patents), one must, apparently, consult the perspective of practitioners who have *less* than ordinary skill (or at least less than average skill) in order to maintain Judge Rich's presumption that PHOSITA "is not one who undertakes to innovate." This interpretation is in considerable tension with the statutory language. At best, it is circular, defining nonobviousness (and therefore patentability) by reference to the skill level of PHOSITA, and then defining PHOSITA's skill level by reference to capacity to make patentable (that is, nonobvious) inventions. At worst, it sets the stage for a downward spiral in which the standard of patentability falls as courts exclude patentees from consideration in assessing the skill level of PHOSITA, making it easier to obtain patents, and leading inexorably to a further lowering of judicial expectations for PHOSITA as yet more practitioners become patentees.

Apart from projecting low expectations onto PHOSITA, the Federal Circuit has made a number of other moves that curtail the relevance of PHOSITA to nonobviousness determinations. Soon after its formation, the Federal Circuit followed the Court of Customs and Patent Appeals in holding that the ultimate determination of obviousness is a legal conclusion subject to plenary review on appeal, rather than a factual determination subject to a more deferential standard of review.²⁰ The Supreme Court opinion in *Graham* was ambiguous on this point,²¹ although earlier decisions of the Court had generally treated the presence or absence of pat-

20. *Aktiebolaget Karlstads Mekaniska Werkstad v. U.S. Int'l Trade Comm'n*, 705 F.2d 1565, 1575 (1983).

21. The Supreme Court stated:

While the ultimate question of patent validity is one of law . . . the § 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

Graham v. John Deere Co., 383 U.S. 1, 17-18 (1965). The opinion goes on to draw an analogy to determinations of negligence, which the courts have sensibly treated as mixed determinations of law and fact.

entable invention as a question of fact, as had some circuit court decisions prior to the formation of the Federal Circuit.²²

Treating judgments of obviousness as unalloyed legal conclusions emphasizes the legal nature of the statutory standard itself, while ignoring the factual nature of the task of applying that standard to specific cases. Inasmuch as PHOSITA has no expertise in deciding legal questions, this approach obscures the relevance of PHOSITA's views about what would have been obvious at the time the invention was made, notwithstanding the apparent centrality of those views under the statutory language. It also leaves considerable room for active judicial review of the ultimate conclusion, irrespective of any findings of fact concerning skill level.

The Federal Circuit has further limited the significance of PHOSITA's views by attaching heightened importance to nontechnological evidence when evaluating obviousness.²³ Although the statutory language defines nonobviousness in purely technological terms, the Supreme Court recognized in *Graham* that “[s]uch secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.”²⁴ The Federal Circuit has elevated the status of such nontechnological evidence from the explicitly “secondary” role posited by the Supreme Court to a position of equal dignity with the primary inquiries—scope and content of the prior art, differences between the claimed invention and the prior art, and level of skill in the art—specified in the statute itself.²⁵ Indeed, the Federal Circuit has substituted the laudatory term “objective evidence” for the more equivocal

22. For a review of early Supreme Court cases on this question, see 2 CHISUM, *supra* note 15, § 5.04[3][a]. See also *Moore v. Shultz*, 491 F.2d 294, 300 (10th Cir. 1974) (“[N]onobviousness is itself a factual question.”) (citation omitted); *Koppers Co. v. Foster Grant*, 396 F.2d 370, 372 (1st Cir. 1968) (“In this situation, although, within limits, a question of law, the determination whether a discovery of a new combination is or is not obvious must be a question of fact.”).

23. Many commentators have remarked upon the significance of this change, including Adelman, *supra* note 1, at 989; Lunney, *supra* note 1, at 375, and Quillen, *supra* note 1, at 193.

24. *Graham*, 383 U.S. at 17-18.

25. E.g., *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 662-63 (Fed. Cir. 2000) (listing *Graham* factors, including secondary considerations such as commercial success and long-felt but unsolved need); *Apple Computer, Inc. v. Articulate Sys., Inc.*, 234 F.3d 14, 26 (Fed. Cir. 2000) (same); *Yamanouchi Pharm. Co., Ltd. v. Danbury Pharmacal, Inc.*, 231 F.3d 1339 (Fed. Cir. 2000) (same); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983) (“Indeed, evidence of secondary considerations may often be the most probative and cogent evidence in the record.”).

“secondary evidence” in its own usage,²⁶ suggesting that reception of the invention by consumers is a more reliable indicator of its obviousness or nonobviousness than a technological evaluation from the perspective of PHOSITA.

Moreover, the Federal Circuit has downgraded PHOSITA from the role of skilled evaluator of obviousness that the statute seems to contemplate to the more limited role of skilled reader of prior art. Even within this diminished role, the Federal Circuit has shown little confidence in PHOSITA’s ability to use what he reads. Although earlier decisions pictured PHOSITA as possessing active awareness of all of the prior art and fully capable of considering references collectively,²⁷ the Federal Circuit has rejected this approach in favor of a more restrictive “suggestion” test for determining when references may be combined to establish obviousness.²⁸ Under this test, an invention consisting of multiple elements, each of which is disclosed in a different prior art reference, is nonetheless presumed to be nonobvious absent a showing through “objective evidence of record” of “some teaching, suggestion or motivation in the prior art to make the specific combination that was made by the applicant.”²⁹ This approach extends Judge Rich’s presumption that PHOSITA is a conventional thinker who is not inclined to innovate by further presuming that PHOSITA lacks the capacity to synthesize the teachings of others on his own. It is difficult to reconcile this approach with the Supreme Court’s admonition in *Graham* that the skill level of PHOSITA is a factual question that must be resolved before determining whether an invention is obvious.³⁰ In some fields, presumably, such a factual inquiry might reveal that ordinary practitioners have the skill to seek and combine elements on their own initiative without needing to be prompted by suggestion.³¹

26. *E.g.*, *Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 726 (Fed. Cir. 2002); *Yamanouchi*, 231 F.3d at 1343; *In re Dembiczak*, 175 F.3d 994, 998 (Fed. Cir. 1999).

27. *E.g.*, *In re Winslow*, 365 F.2d 1017, 1020 (C.C.P.A. 1966) (“We think the proper way to apply the 103 obviousness test to a case like this is to first picture the inventor as working in his shop with the prior art references—which he is presumed to know—hanging on the walls around him.”).

28. *E.g.*, *In re Huston*, 308 F.3d 1267 (Fed. Cir. 2002) (requiring that prior art provide motivation, suggestion or teaching which would lead an individual to combine the relevant teachings of the references); *In re Thrift*, 298 F.3d 1357 (Fed. Cir. 2002) (same); *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002) (same).

29. *In re Rouffet*, 149 F.3d 1350, 1355-56 (Fed. Cir. 1998).

30. *See Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1965).

31. Further complexities arise from decisions holding that even in the presence of explicit suggestion in the prior art, an invention might nonetheless be nonobvious if it is merely “obvious to try,” unless the prior art affords a basis for a reasonable expectation of success. *In re Merck & Co.*, 800 F.2d 1091 (Fed. Cir. 1986). Although the focus on

The Federal Circuit has chastised the USPTO for invoking the high skill level³² or even “common sense”³³ of PHOSITA to explain the obviousness of an invention consisting of multiple elements that are not combined in a single prior art reference. As a formal matter, the Federal Circuit has consistently acknowledged that the necessary “suggestion” to combine elements need not be explicit in prior art references, but might instead be found in “the knowledge of one of ordinary skill in the art” or in “the nature of the problem to be solved.”³⁴ But when the USPTO has relied upon skill level rather than prior art to explain why the differences between the prior art and the claimed invention would have been obvious, the Federal Circuit has often reversed, accusing USPTO of “falling into the hindsight trap.”³⁵ The court’s skepticism reached an apogee in the case of *In re Lee*,³⁶ in which it vacated a rejection for obviousness that rested on a combination of two references. Although the examiner and USPTO Board thought that “common knowledge and common sense” would provide motivation to combine the references, the Federal Circuit held that this approach was too conclusory to satisfy the requirements of the Administrative Procedure Act:

The Board’s findings must extend to all material facts and must be documented on the record, lest the “haze of so-called expertise” acquire insulation from accountability. “Common knowledge and common sense,” even if assumed to derive from the agency’s expertise, do not substitute for authority when the law requires authority Thus when they rely on what they assert to be general knowledge to negate patentability, that knowledge must be articulated and placed on the record.³⁷

reasonable expectation of success would seem to call for an inquiry directed towards PHOSITA, the Federal Circuit has sometimes required that the expectation of success be documented in the prior art. *See, e.g., In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991).

32. *Rouffet*, 149 F.3d at 1357-58.

33. *In re Lee*, 277 F.3d 1338, 1344-45 (Fed. Cir. 2002); *In re Zurko*, 258 F.3d 1379, 1385 (Fed. Cir. 2001).

34. *Beckson Marine, Inc. v. NFM, Inc.*, 292 F.3d 718, 728 (Fed. Cir. 2002); *SIBIA Neurosciences, Inc. v. Cadus Pharm. Corp.*, 225 F.3d 1349 (Fed. Cir. 2000).

35. *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000) (“In this case, the Examiner and the Board fell into the hindsight trap.”); *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999) (“In this case, the Board fell into the hindsight trap.”); *Rouffet*, 149 F.3d at 1358 (“[T]his court infers that the examiner selected these references with the assistance of hindsight. This court forbids the use of hindsight in the selection of references that comprise the case of obviousness.”) (citation omitted).

36. 277 F.3d 1338 (Fed. Cir. 2002).

37. *Id.* at 1344-45 (citations omitted).

Recent decisions appear to retreat somewhat from this approach. The Federal Circuit has affirmed rejections for obviousness despite gaps in tracing the chain of inferences that support an implied "suggestion."³⁸ It has also acknowledged that the scientific competence of examiners and administrative patent judges might equip them to draw informed inferences about the motivation that prior art would provide to PHOSITA.³⁹ Furthermore, the Federal Circuit has recognized that the suggestion or motivation to combine references need not be expressly stated in the prior art, but may come from reasoning based on established scientific principles or legal precedent.⁴⁰ Each of these approaches for rejecting a claim, however, requires "particular findings" grounded in objective evidence,⁴¹ with the practical effect of excluding from the analysis the tacit knowledge ordinary practitioners commonly possess. Once again, the effect is to divert attention from PHOSITA's judgment and skill in evaluating inventions for obviousness, and to refocus it upon the meaning of the prior art references.

The concern about hindsight that motivates the focus on what can be documented in the prior art is a legitimate worry. Once one knows something, it can be a difficult mental exercise to pretend not to know it.⁴²

38. *E.g.*, *In re Huston*, 308 F.3d 1267, 1280 (Fed. Cir. 2002) (noting that the Board's "conclusions are cryptic, but they are supported by the record").

39. *E.g.*, *In re Berg*, 320 F.3d 1310, 1315 (Fed. Cir. 2003). The court in *Berg* stated: As persons of scientific competence in the fields in which they work, examiners and administrative patent judges on the Board are responsible for making findings, informed by their scientific knowledge, as to the meaning of prior art references to persons of ordinary skill in the art and the motivation those references would provide to such persons. Absent legal error or contrary factual evidence, those findings can establish a prima facie case of obviousness.

Id.

40. *In re Eli Lilly & Co.*, 902 F.2d 943 (Fed. Cir. 1990) (evaluating obviousness of claimed invention by comparing it with legal precedents analyzing relationship between invention and prior art); *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988) (motivation to combine references may come from "knowledge generally available to one of ordinary skill in the art"); *In re Sernaker*, 702 F.2d 989, 994-95 (Fed. Cir. 1983) ("[W]e agree, it was not necessary that the prior art suggest expressly or in so many words, the 'changes or possible improvements' the inventor made. It was only necessary that he apply '*knowledge clearly present in the prior art.*'") (emphasis in original) (citation omitted). The case law is summarized for examiners in § 2144 of the Manual of Patent Examining Procedures, available on the Internet at http://www.uspto.gov/web/offices/pac/mpep/documents/2100_2144.htm.

41. *See In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000) ("Whether the Board relies on an express or an implicit showing, it must provide particular findings related thereto. Broad conclusory statements standing alone are not 'evidence.'").

42. *See Rachlinski*, *supra* note 7 (studying the problem of hindsight knowledge).

Moreover, the language of § 103 explicitly points to the prior art as a benchmark for evaluating the obviousness of the invention—“if the differences between the subject matter sought to be patented and the prior art are such that . . .”—and specifies that the obviousness of the invention should be considered “at the time the invention was made.”⁴³ Plainly, one cannot apply the standard without comparing the invention to the prior art.

But the statutory language just as plainly specifies that the obviousness of an invention is to be determined from the perspective of PHOSITA: “[T]he subject matter as a whole would have been obvious . . . to a person having ordinary skill in the art to which said subject matter pertains.”⁴⁴ The statutory specification of whose assessment of obviousness matters (obvious to whom?) is as essential to the evaluation as the statutory specification of the background prior art (obvious compared to what?). Indeed, it is difficult to make sense of a nonobviousness standard that could be applied simply by comparing the invention to the prior art without reference to some benchmark capacity for adapting the prior art to the problem at hand, and “ordinary skill in the art” is the benchmark specified by Congress.

III. WHAT PHOSITA KNOWS

Bringing this perspective to bear upon nonobviousness determinations undoubtedly requires more than scrutinizing the prior art. Active practitioners of a technology bring more to a problem than may be found in written prior art, including training, judgment, intuition, and tacit knowledge acquired through field experience. Scientific and technological work involve the application of craft skills that are familiar to practitioners but defy explicit articulation.⁴⁵ The gap between the skill of ordinary practitioners and the written record of prior art is likely to be particularly significant in in-

43. 35 U.S.C. § 103 (2000).

44. *Id.* § 103.

45. As explained by Jerome Ravetz:

The craftsman works with particular objects; he must know their properties in all their particularity; and his knowledge of them cannot be specified in a formal account. Indeed, no explicit description of a craftsman's techniques, and of the objects on which he works, can be more than the simplest elements of the subject. They can be useful for the beginner, but he must develop a personal, tacit knowledge of his objects and what he can do with them, if he is to produce good work. Indeed, much of his technique may not even have the character of conscious knowledge; by experience, his hands and eyes have taught themselves.

JEROME R. RAVETZ, SCIENTIFIC KNOWLEDGE AND ITS SOCIAL PROBLEMS 75-76 (1971).

dustrial technology, with its prevailing culture of secrecy and few incentives to publish. Even when industrial technologists disclose their work in publications or patents, they are likely to be guarded about what they reveal. The written record is a poor proxy for the background such practitioners would draw upon in solving problems or in evaluating the obviousness of an invention.

Within the USPTO, another proxy is readily available. Patent applications are initially evaluated by examiners, and rejections are appealed to the Board of Patent Appeals and Interferences. Patent examiners and Board members often have considerable scientific and technical training and may at one time have been practicing technologists. Through such training and experience, they may have absorbed tacit knowledge of the sort possessed by PHOSITA but not reflected in the written prior art record. This is a good reason for the Federal Circuit to defer to USPTO rejections of patent applications for obviousness,⁴⁶ even when the rejections rest in part on “common sense” and judgments about how skilled practitioners would connect the dots revealed in the prior art. When the Federal Circuit scolds examiners for failing to anchor their rejections in explicit suggestions in the prior art or in fully articulated reasoning therefrom, it effectively excludes tacit knowledge from the evaluation and clears the path for the issuance of patents on inventions that are within easy reach of practitioners of ordinary skill.

If anything, the tacit knowledge of patent examiners is likely to fall below that of current practitioners of the technology. Full-time examiners are at best former practitioners who have moved on to new careers that use very different skills. Their technological training and skills can only atrophy and get out of date as their skills as patent examiners grow. They will thus have less technological skill (and therefore find fewer inventions obvious) than the hypothetical PHOSITA, whose skill level is what matters under the statute.⁴⁷ If the USPTO is issuing patents for obvious inventions,

46. Arti Rai has argued that USPTO rejections should be entitled to greater deference than allowances because institutional incentives make it easier to allow patent applications than to reject them. Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1075-77 (2003). Instead, the Federal Circuit has done the opposite; on one hand requiring meticulous documentation by examiners of the basis for rejections, while on the other hand requiring those challenging the validity of an issued patent to establish the factual predicate for the challenge by clear and convincing evidence. *Id.*

47. Of course, in most fields patent examiners are likely to be more familiar than current practitioners with the content of prior art references because their current jobs require examiners to read references. But familiarity with the literature should not be confused with “ordinary skill in the art.” By focusing attention upon “the differences be-

it remains possible to challenge the validity of the patents. An issued patent enjoys a presumption of validity⁴⁸ but a defendant charged with infringement may nonetheless avoid liability by proving that the invention was obvious to a PHOSITA at the time it was made. This provides another opportunity to introduce the perspective of practitioners of ordinary skill in evaluating the obviousness of an invention. The defendant can offer testimony of an expert witness who will review the prior art and explain why it would have made the invention obvious, and the patent owner will predictably counter with its own expert telling the opposite story. But while this adversarial exchange of expert testimony might afford an extensive evidentiary record in support of a conclusion of either obviousness or nonobviousness, it is unlikely to yield a dispassionate technological assessment of the invention. By this point the stakes are high, the experts know who hired them, and the adversarial setting is more likely to polarize opinions and distort evidence than to reveal how the invention would have seemed at the time it was made to the inventor's contemporaries in the technology community. Moreover, the Federal Circuit requires that the facts underlying a holding of invalidity for an issued patent be shown by clear and convincing evidence,⁴⁹ an extraordinary burden in civil litigation that may be difficult to meet with opinion testimony based upon tacit knowledge.⁵⁰ The possibility of showing obviousness through expert testimony in infringement litigation is unlikely to correct for deficiencies in the evidentiary basis for the initial determination of nonobviousness in the USPTO.

IV. CONSULTING PHOSITA

A better mechanism for bringing the perspective of PHOSITA to bear upon obviousness determinations would be to permit the USPTO to consult with outside technology practitioners at an earlier stage in the process. Such a mechanism could supplement the expertise of examiners by giving them access to the actual knowledge of current practitioners, including

tween the subject matter sought to be patented and the prior art," the statutory standard necessarily presumes that the hypothetical PHOSITA is familiar with the prior art, but it does not stop there. It goes on to attribute "ordinary skill in the art" to the hypothetical evaluator.

48. 35 U.S.C. § 282 (2000).

49. *Buildex, Inc. v. Kason Indus., Inc.*, 849 F.2d 1461,1463 (Fed. Cir. 1988).

50. *See, e.g., Upjohn Co. v. Mova Pharm.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000) ("The record does not contain substantial evidence in support of Dr. Rodriguez' conclusion that it would have been obvious to make this change. . . . At this critical point in the determination of obviousness, there must be factual support for an expert's conclusory opinion.").

tacit knowledge. It would permit the USPTO to document the obviousness of inventions that are not disclosed or explicitly suggested in prior art, but that are nonetheless obvious to one with the skills and tacit knowledge of PHOSITA. Moreover, this mechanism could be especially valuable in arts that are relatively new entrants into the patent system, such as computer-implemented inventions and business methods, for which the written record is a particularly inadequate approximation of the actual knowledge of PHOSITA.

The USPTO does not have any procedures for consulting the judgment of current technological practitioners when applying patentability standards prior to the issuance of patents. Although third parties may submit to the USPTO written citations to prior patents and printed publications with a bearing on patentability “at any time”⁵¹ and request reexamination of a patent on the basis of such prior art,⁵² the statute explicitly prohibits “protest or other form of pre-issuance opposition” while a patent application is pending unless the applicant gives written consent.⁵³ The USPTO has implemented this statutory directive in a rule that permits third parties to submit patents and printed publications relevant to a pending published patent application during a two-month window, but forbids the inclusion of “any explanation of the patents or publications, or any other information.”⁵⁴ Thus, these provisions limit third-party participation to written prior art references and leave no room for showing the skills or tacit knowledge of PHOSITA.⁵⁵ Moreover, the input that these provisions are likely to generate comes from interested parties rather than disinterested representatives of the technological community.

In contrast to the USPTO, most federal agencies charged with administering legal standards that turn on scientific or technical determinations have mechanisms in place for consulting the judgments of outside experts, including scientific advisory boards and peer review mechanisms.⁵⁶ Sometimes mandated by Congress and sometimes implemented voluntarily as a

51. 35 U.S.C. § 301.

52. *Id.* § 302.

53. *Id.* § 122(c).

54. 37 C.F.R. § 1.99(d) (2004).

55. The USPTO has offered alternative proposals for amending the patent laws to provide for a more robust system of post-grant review of patent claims as part of its *21st Century Strategic Plan*. The overall plan is posted at http://www.uspto.gov/web/offices/com/strat21/stratplan_03feb2003.pdf, and the specific action paper on post-grant review is posted at <http://www.uspto.gov/web/offices/com/strat21/action/sr2.htm> [hereinafter USPTO PLAN].

56. See generally SHEILA JASANOFF, *THE FIFTH BRANCH: SCIENCE ADVISORS AS POLICYMAKERS* (1990).

matter of agency discretion, these mechanisms take a variety of forms and have been subject to a variety of criticisms. At their best, these mechanisms provide agencies with a quality control check on the scientific basis for controversial decisionmaking, and thereby fortify the technocratic claims of agency staff to autonomy and deference. The George W. Bush Administration recently underscored the importance of peer review of the scientific basis for agency decisions through release of a Proposed Bulletin on Peer Review and Information Quality.⁵⁷

Criticism of agency peer review has highlighted some hazards to consider in adapting peer review to the needs of the patent system. Peer review inevitably delays administrative response times and adds to the burden of inertia confronting those who seek government action.⁵⁸ In some contexts, critics have charged that scientific review cloaks in scientific garb what are ultimately political choices made in the face of scientific uncertainty.⁵⁹ Many commentators have noted that peer review is prone to conflict of interest and reinforces bias in favor of orthodox views.⁶⁰

Concerns about delays and conflict of interest seem more pertinent to the challenge of providing peer input to the USPTO on determinations of obviousness than concerns about cloaking political choices in scientific garb or about reinforcing bias in favor of orthodox views. Obviousness determinations involve evaluations of past technological accomplishments rather than predictions of future consequences, leaving somewhat less room for distortion on the basis of politics or scientific orthodoxy. Sheila Jasanoff has suggested that peer review is better at “cementing consensus among scientists of similar disciplinary training and outlook” than it is at resolving scientific uncertainty or disagreement about political choices.⁶¹

57. OFFICE OF MANAGEMENT & BUDGET, PROPOSED BULLETIN ON PEER REVIEW AND INFORMATION QUALITY (2003) [hereinafter OMB PEER REVIEW BULLETIN], at http://www.whitehouse.gov/omb/inforeg/peer_review_and_info_quality.pdf.

58. See OMB Watch’s Response to OMB’s Peer Review Bulletin (Aug. 29, 2003), at <http://www.ombwatch.org/article/articleprint/1771/-1/1>.

59. E.g., JASANOFF, *supra* note 56, at 59-60 (describing demands for peer review of the basis for EPA risk regulation from industry and the Reagan administration during the 1980s).

60. E.g., Fiona Godlee & Kay Dickersin, *Bias Subjectivity, Chance, and Conflict of Interest in Editorial Decisions*, in PEER REVIEW IN HEALTH SCIENCES 57-78 (Fiona Godlee & Tom Jefferson eds., 1999) [hereinafter PEER REVIEW IN HEALTH SCIENCES]; Christine Wennerås & Agnes Wold, *Bias in Peer Review of Research Proposals*, in PEER REVIEW IN HEALTH SCIENCES, *supra*, at 79-89; David F. Horrobin, *The Philosophical Basis of Peer Review and the Suppression of Innovation*, 263 JAMA 1438 (1990).

61. JASANOFF, *supra* note 56, at 62.

This observation suggests that the identification of obvious inventions is a task for which peer review is relatively well suited.

Nonetheless, several features of the patent system complicate the task of developing a suitable mechanism.⁶² First, the USPTO makes decisions involving an extraordinarily broad range of technologies in comparison to the decisions made by other agencies such as the Environmental Protection Agency (EPA) or the Food and Drug Administration (FDA). This makes it much harder to put together a scientific advisory board with the right technological expertise to render timely advice. Second, the USPTO makes many small decisions, most of which ultimately have little impact, rather than a small number of high-impact decisions.⁶³ The time and expense of securing external evaluations for all USPTO decisions would be huge, and given that the majority of patents cover technologies that are never used, licensed, or litigated, it is hard to justify the expense.⁶⁴ It is difficult to identify *ex ante* the relative handful of decisions that will prove significant enough to warrant costly review.⁶⁵ Third, the legally-mandated confidentiality of pending patent applications might require deferral of disclosure to outsiders for at least 18 months after filing, and perhaps until issuance of a patent if the applicant is not seeking patent protection outside the United States.⁶⁶ Patent applicants from industry might legitimately worry about competitive harm from premature disclosure of their inventions to other practitioners. Even worse, a practitioner who works (or consults) for a competing firm might have a material interest in advising the USPTO to reject a patent claim despite (or even because of) its technical merits.

These features of USPTO decisions suggest parallels to two other peer review systems that differ in significant respects from the scientific advi-

62. The USPTO currently has no such mechanism in place. Although the USPTO has a Public Advisory Committee for Patents, the members of this group are for the most part lawyers and the matters upon which it advises the agency concern broad matters of policy rather than specific technical issues. 35 U.S.C. § 5 (2000); USPTO, Public Advisory Members, at <http://www.uspto.gov/web/offices/com/advisory/notices/members.html> (last visited Aug. 5, 2004) (posting membership roster).

63. Cf. OMB PEER REVIEW BULLETIN, *supra* note 57, at 9-11 (setting a threshold for triggering additional peer review requirements of “especially significant regulatory information” for decisions “with a possible impact of more than \$100 million in any year”).

64. Cf. Mark Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1508-11 (2001) (arguing that *ex ante* measures to weed out bad patents are unlikely to be worth the expense).

65. F.M. Scherer, *The Innovation Lottery*, in EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY 3-21 (Rochelle Dreyfuss et al. eds., 2001).

66. 35 U.S.C. § 122.

sory boards used by some federal agencies: peer review of submitted articles for scientific journals and peer review of grant proposals for sponsors. In contemplating the available options for introducing peer review into the USPTO, it might be instructive to consider the mechanisms used for these other systems and the criticisms that have been directed at them.

Journal peer review comes closest to approximating the challenge that the USPTO would face in gathering outside advice across a broad technological terrain. Although some scientific journals are narrowly specialized, some high-impact journals such as *Science* and *Nature* cover a broad range of subject matter. The editors of these journals need to draw upon diverse outside expertise to review and evaluate the claims made in submitted manuscripts.⁶⁷ Rather than turning to standing committees of outside advisors who meet and deliberate as a group, journal editors typically select individuals to consider particular manuscripts on an *ad hoc* basis.⁶⁸ Typically the reviewers know the identity of authors, but the reviewers themselves remain anonymous. Reviewers may recommend acceptance, rejection, or revisions to improve the manuscript.⁶⁹ Editors retain substantial control of the entire process, selecting reviewers, collecting their responses, and making other editorial decisions.⁷⁰

There is a burgeoning literature on journal peer review.⁷¹ Criticisms of journal peer review include that it is costly, slow, and subject to bias and conflict of interest.⁷² Yet journal peer review remains widespread in scien-

67. Cf. John Burnham, *The Evolution of Editorial Peer Review*, 263 JAMA 1323, 1324 (1990) ("Peer reviewing, in fact, developed in situations in which an editor or editors lacked the specialized knowledge that would have permitted them to make decisions about highly technical articles.").

68. DARYL E. CHUBIN & EDWARD J. HACKETT, PEERLESS SCIENCE: PEER REVIEW AND U.S. SCIENCE POLICY 91-95 (1990) [hereinafter CHUBIN & HACKETT].

69. Greg Myers has compared this process to the negotiations between patent applicant and examiner over the scope of claim language. Greg Myers, *Texts as Knowledge Claims: The Social Construction of Two Biology Articles*, 15 SOC. STUD. OF SCI. 593-630 (1985). The statutory prohibition against introduction of new matter into a patent disclosure would seem to be a significant distinction between the two processes. 35 U.S.C. § 132(a).

70. CHUBIN & HACKETT, *supra* note 68, at 89, 92-94.

71. See, e.g., CHUBIN & HACKETT, *supra* note 68; STEPHEN LOCK, A DIFFICULT BALANCE: EDITORIAL PEER REVIEW IN MEDICINE (1985); PEER REVIEW IN HEALTH SCIENCES, *supra* note 60. Many papers on peer review were generated for a series of international conferences on peer review organized by the *Journal of the American Medical Association* and published in special issues of 287 JAMA 21 (2002); 280 JAMA 3 (1998); 272 JAMA 2 (1994); 263 JAMA 10 (1990).

72. Drummond Rennie, *Editorial Peer Review: Its Development and Rationale*, in PEER REVIEW IN HEALTH SCIENCES, *supra* note 60, at 3-13.

tific publication and is widely considered a *sine qua non* for credibility and professionalism in scientific work.

Grant peer review systems, in keeping with the missions of research sponsors, tend to be more narrowly focused scientifically. Although details vary from one sponsor to the next, grant peer review systems often bring reviewers together to discuss grant proposals and to make recommendations for funding.⁷³ As with editorial peer review, the sponsor retains considerable control through the selection of reviewers and the retention of discretion to choose which proposals to fund. Grant peer review has been less studied than editorial peer, although it has provoked similar criticisms.⁷⁴ Grant peer review has been further criticized for bias against unorthodox approaches and ideas and in favor of scientists and institutions that already have established reputations.⁷⁵

Because judgments about obviousness are supposed to proceed from the perspective of ordinary practitioners who are steeped in orthodox views, the worry about peer review involving bias against unorthodox approaches seems inapposite in this context. (If anything, conventional thinking by patent peer reviewers should make them more easily impressed with the nonobviousness of unorthodox inventions, working in favor of those who take new technological approaches.) On the other hand, introducing peer review into the patent system could present a significant risk that conflict of interest will infect judgments about patentability.

Current practitioners are more likely to share the perspective of PHOSITA than past practitioners, whose expertise would likely overlap with that of the USPTO examiners. But current practitioners are especially likely to have conflicts of interest, particularly if they are working in the same industry as the patent applicant. This concern argues for a transparent process in which the identities of reviewers are disclosed⁷⁶ and review is deferred until applications have become public. It might also be better managed in a process that brings multiple reviewers together to deliberate

73. CHUBIN & HACKETT, *supra* note 68, at 19-24.

74. *Id.* at 28-43; Simon Wessely & Fiona Wood, *Peer Review of Grant Applications: A Systematic Review*, in PEER REVIEW IN HEALTH SCIENCES, *supra* note 60, at 14-27.

75. See, e.g., Gilbert W. Gillespie, Jr., et al., *Experience with NIH Peer Review: Researcher Cynicism and Desire for Change*, 10 SCI., TECH., & HUMAN VALUES 44 (1985); Rustum Roy, *Funding Science: The Real Defects of Peer Review and an Alternative to It*, 10 SCI., TECH., & HUMAN VALUES 73 (1985).

76. Cf. OMB PEER REVIEW BULLETIN, *supra* note 57, at 4-5 (arguing for a transparent peer review process to enhance the credibility of peer review of regulatory science).

and advise the USPTO about categories of patent applications rather than relying upon individual evaluations that are independently rendered and privately submitted to the agency.⁷⁷

The task confronting the patent system is not to select the most worthy technologies for reward, but simply to determine whether claimed inventions would have been obvious at the time they were made to PHOSITA. Although most peer review systems seek to enlist the expertise of recognized leaders in the field, less distinguished practitioners might be better suited to the task of inhabiting the perspective of a hypothetical PHOSITA. This should enlarge the universe of practitioners who could serve, but the diminished distinction associated with service might nonetheless make it harder to recruit reviewers.⁷⁸ It may be necessary (or prudent) to compensate reviewers for their service, perhaps under agreements that make them temporary employees of the government. The risk of relying upon volunteers would be that the ranks of those willing to serve would tend to be dominated by those with ulterior motives of defeating the patents of competitors.

V. CONCLUSION

In contrast to other agencies that make decisions at the cutting edge of science and technology, the USPTO has no mechanisms in place for consulting the judgment of currently active scientific and technological practitioners before it acts. The special needs and challenges of the patent system would undoubtedly call for modifications in established peer review mechanisms to develop a suitable model. Plainly, outside review of every patent application would not be cost-effective. In selected areas, however, outside review of categories of claims might be a useful source of information and validation for the USPTO in support of judgments that the Patent Act mandates be made from the perspective of persons having ordinary skill in the art. The goal should be to provide the USPTO with input from current technological practitioners at a relatively early stage in the process through a mechanism that yields disinterested advice as to what is obvious.⁷⁹ This input will supplement the disclosures of written prior art

77. See, e.g., JASANOFF, *supra* note 56, at 160-65 (describing successful experience of FDA Cardio-Renal Committee in deliberating upon guidelines for a product class, in which committee members functioned more as a team of consultants with different perspectives to offer and avoided adversarial conflict).

78. See, e.g., Rennie, *supra* note 72, at 8 (“Reviewers appreciate being recognized as experts and drawn into the academic body.”).

79. This proposal is different from pending recommendations from the USPTO, the FTC, and the National Academies of Science to amend the statute to provide for post-

references, providing a window into the tacit knowledge of contemporary practitioners and documenting the obviousness of inventions in fields where patents and printed publications understate the knowledge that PHOSITA would likely bring to a problem.

Although the mechanism would need to be designed with care to avoid violating the statutory confidentiality of unpublished patent applications and the prohibition against protest or pre-issuance oppositions after publication,⁸⁰ a potentially more serious obstacle lies not in the statute, but in the caselaw. Despite statutory direction to evaluate obviousness from the perspective of a person having ordinary skill in the art, the Federal Circuit has long relegated PHOSITA to a subsidiary role in evaluating the nonobviousness of inventions. If PHOSITA is presumed to be an unimaginative literalist who can only read the prior art and do what it explicitly suggests, there is little point in consulting actual practitioners to determine what would be obvious to such a person. But if, as recent decisions suggest, the Federal Circuit is willing to look outside the written record of prior art to evaluate the obviousness of an invention, then perhaps the time is ripe to explore new mechanisms for documenting the tacit knowledge of practitioners of ordinary skill.

grant review of issued patents. See FED'L TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY, EXECUTIVE SUMMARY 7-8 (2003) (Recommendation 1), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>, reprinted in 19 BERKELEY TECH. L.J. 861, 869-70 (2004); NAT'L ACAD. OF SCIS., A PATENT SYSTEM FOR THE 21ST CENTURY 78-83 (Stephen A. Merrill et al. eds., forthcoming 2004), available at <http://www.nap.edu/books/0309089107.html>; USPTO PLAN, *supra* note 55 (Post-Grant Review of Patent Claims). Each of those recommendations provides for enhanced participation by parties with vested interests in defeating patent claims and allows those challenges to be brought before the USPTO rather than in litigation.

80. See 35 U.S.C. §§ 122(a), (c) (2000).

ALLOCATING POWER OVER FACT-FINDING IN THE PATENT SYSTEM

By *Arti K. Rai*[†]

TABLE OF CONTENTS

I. INTRODUCTION	907
II. CHALLENGES TO FACT-FINDING IN USPTO PATENT GRANTS.....	910
III. NONOBVIOUSNESS: THE ROLE OF DEFERENCE TO USPTO PATENT DENIALS	912
IV. POST-GRANT REVIEW PROCEEDINGS: PRESUMPTION OF VALIDITY.....	917
V. A CAUTIONARY NOTE ON OUTCOMES (AND EVALUATION THEREOF)	919
VI. CONCLUSION	921

I. INTRODUCTION

Under well-settled patent law, the decision regarding whether to grant or deny a patent turns on technical fact-finding. The decision maker must assess both the relevant written knowledge in a particular art at a given time and the general level of skill in the art at that time.¹ For example, patents are supposed to be granted only when, against the background of the knowledge that existed at the time of invention, the invention would not have been obvious to the person having ordinary skill in the art (PHOSITA).² Although this nonobviousness determination is ultimately considered a question of law, the Supreme Court has repeatedly emphasized that it involves inquiry into technical facts.³ Thus, a key question to consider in evaluating proposals to improve the patent system is how such proposals allocate fact-finding power.⁴

© 2004 Arti K. Rai

[†] Visiting Professor, Yale Law School, and Professor of Law, Duke Law School. I thank Stuart Benjamin, Bob Cook-Deegan, John Duffy, and participants at the symposium on *Ideas into Action: Implementing Reform of the Patent System* for very helpful comments.

1. *See, e.g.*, *Graham v. John Deere Co.*, 383 U.S. 1 (1966) (holding that the nonobviousness standard enunciated in Section 103 of the patent statute requires factual inquiry into “scope and content of the prior art” and into “ordinary skill in the pertinent art”).

2. *Id.*

3. *Id.* at 17; *see also* *Dennison Mfg. v. Panduit Corp.*, 475 U.S. 809 (1986) (remanding to the Federal Circuit with specific instructions on deference to the trial court’s factual determinations regarding nonobviousness).

4. Some might argue that, case law notwithstanding, technical fact-finding should not be particularly relevant because the PHOSITA is a policy construct designed to achieve the economic goal of promoting invention and further develop-

The recommendations that the Federal Trade Commission (FTC) and the National Academy of Sciences (NAS) make in their reports could have a substantial impact on which patent institution has power over fact-finding. This is particularly true with respect to the recommendations that one or more reports makes in the following three arenas: judicial deference to the ordinary U.S. Patent and Trademark Office (USPTO) decision to issue a patent; USPTO and Court of Appeals for the Federal Circuit (Federal Circuit) application of the nonobviousness standard; and judicial deference to USPTO findings in proposed post-grant review proceedings.

ment/commercialization of the invention. *Cf.* FED. TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY ch. 1, at 10 (2003) [hereinafter FTC REPORT] (“Competition policy and economic perspectives would ask a somewhat different question, one that focuses on whether and how the patent is necessary to encourage innovation.”), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>. Thus, for example, whether an invention is nonobvious to a PHOSITA is a policy question, not a technical one. This argument misses the mark, however. Although the PHOSITA is undoubtedly a policy construct, the central policy question of whether an invention is likely to arise absent a patent incentive is closely linked to technical issues. In particular, if the ordinary technician in a given art could readily formulate a particular invention from knowledge of what has come before, that invention will likely arise without the need for patent-related output restrictions and deadweight loss. Moreover, although technically difficult inventions may well arise without a patent (especially if the research is, for example, federally funded), the technical difficulty of an invention often serves as a reasonably transparent and reliable proxy for determining the extent to which a patent incentive may be important. *Id.* at 11 (noting that the “more manageable standards of the patent system” help to address the less administrable policy question). Of course, there may be cases where other policy reasons favor granting a patent. For example, an invention such as a therapeutic drug could be technically obvious but expensive to commercialize. In that case, a patent on the prototype drug could provide the monopoly security necessary for such commercialization. Alternatively, it is conceivable an invention could be technically obvious but nonetheless expensive to generate. In each of these cases, purely economic considerations might weigh in favor of granting a patent. For an argument along these lines, see, for example, Dan Burk & Mark Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1660-62 (2003) (arguing that purely economic factors should be a secondary consideration used in the nonobvious analysis). More generally, as various commentators, including the FTC, NAS, and this author, have recognized, the Federal Circuit can, and should, explicitly enunciate interpretations of the patent law that take into account the expanding economic literature on patents, including literature that illustrates the different role patents play in different industries. See FTC REPORT, *supra*, EXECUTIVE SUMMARY, at 17, reprinted in 19 BERKELEY TECH. L.J. 861, 880-81 (2004) [hereinafter FTC EXECUTIVE SUMMARY]; NAT'L ACAD. OF SCIS., A PATENT SYSTEM FOR THE 21ST CENTURY 4-5 (Stephen A. Merrill et al. eds., forthcoming 2004) [hereinafter NAS STUDY], available at <http://www.nap.edu/books/0309089107.html>; Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1102-1134 (2003). These sorts of arguments do not, however, obviate the need for technical fact-finding.

The FTC's approach to power allocation is relatively explicit: the USPTO's factual findings should be accorded a low level of deference when made in the context of an ordinary patent grant; significant deference when made in the context of a patent denial; and perhaps the highest level of deference when made in a post-grant review.⁵ While the NAS Study does not focus as explicitly on how courts should treat USPTO fact-finding, its recommendations also have significant implications for power allocation.

In this Article, I evaluate the power allocation that would emerge from each report's recommendations. I argue that, in their areas of overlap, both the FTC and NAS reports properly account for the fact-finding competence—or lack thereof—of the USPTO. Where the reports diverge, however, the FTC report may do a better job of accurately diagnosing, and suggesting remedies for, the relevant fact-finding problem. In contrast with the NAS, which would treat the USPTO's fact-finding role as minimal, at least outside the context of post-grant review, the FTC's recommendations account for one context—the patent denial—where USPTO fact-finding could be accurate.

This Article is organized around the three contexts in which the reports' recommendations have an impact on the allocation of fact-finding power. Part II evaluates the recommendation made explicitly by the FTC and somewhat more implicitly by the NAS, that the fact-finding associated with USPTO patent grants be accorded a relatively low level of deference. This recommendation appears appropriate: even though patent examiners, and the USPTO more generally, probably possess more technical expertise than other government actors, reducing the burden associated with challenging patent validity also takes into account the institutional pressures that are likely to cause examiners to grant questionable patents. Part III discusses why raising the nonobviousness standard in the manner the FTC advocates effectively asks the Federal Circuit to be more deferential to USPTO patent denials. The FTC's recommendation is apt: unlike USPTO patent grants, USPTO patent denials are likely to invoke usefully its technical expertise. In contrast, the NAS recommendations regarding nonobvi-

5. FTC EXECUTIVE SUMMARY, *supra* note 4, at 8 (post-grant review), *reprinted in* 19 BERKELEY TECH. L.J. 861, 869-70 (2004); *id.* at 8-10 (ordinary patent grants), *reprinted in* 19 BERKELEY TECH. L.J. 861, 870-72; *id.* at 11-12 (nonobviousness-based patent denials), *reprinted in* 19 BERKELEY TECH. L.J. 861, 873-75. For a somewhat similar point, see Rai, *supra* note 4, at 1077, which discusses the Federal Circuit's deferential view of USPTO fact-finding in the context of patent grants but not in the context of patent denials and arguing that the Federal Circuit has gotten the asymmetry "precisely backwards."

ousness may not take sufficient account of the USPTO's technical expertise. Part IV discusses the reports' recommendations on how courts should view the results of post-grant review proceedings. While the FTC explicitly, and correctly, urges a high level of deference to USPTO fact-finding in the post-grant review, the NAS does not address the issue. There are, however, good reasons for the Federal Circuit to give significant deference to findings made by the USPTO in post-grant review proceedings.

As noted, the FTC Report, and to a lesser extent the NAS Study, recommend changes in levels of deference. While tweaking of deference levels is a hallmark of our legal system, the issue of whether such alteration actually affects judicial behavior remains open: for a variety of reasons, effects on judicial behavior may be difficult to discern empirically. The Article therefore concludes with a section, Part V, discussing mechanisms for empirical evaluation of altered deference levels.

II. CHALLENGES TO FACT-FINDING IN USPTO PATENT GRANTS

The FTC Report recommends altering the burden of proof associated with challenging the ordinary patent grant.⁶ According to the FTC, overcoming the presumption of patent validity enunciated in the patent statute should require only a preponderance of the evidence, not the clear and convincing evidence Federal Circuit case law currently requires.⁷ Although the NAS does not explicitly recommend altering the burden of proof, it reaches a somewhat similar conclusion through its recommendations on post-grant review. First, the NAS recommends that third party patent challenges in a post-grant review proceeding be subject to a preponderance of the evidence standard.⁸ Second, the NAS recommends that federal district courts be able to refer questions of patent validity to a post-grant review proceeding, thus confining themselves to issues of infringement.⁹ The effect of these recommendations would be the application of a preponderance of the evidence standard to a significant percentage of proceedings.¹⁰

6. FTC REPORT, *supra* note 4, ch. 5, at 28 (“[T]here is no persuasive reason why the level of that burden should be clear and convincing evidence.”).

7. *Id.*

8. NAS STUDY, *supra* note 4, at 79.

9. *Id.*

10. One difficulty with the NAS approach is that it would appear to lead to a situation where its recommended preponderance of the evidence standard was applied to certain validity challenges and the Federal Circuit's recommended clear and convincing evidence standard to other validity challenges.

The FTC's recommendation—and that of the NAS, to the extent it is similar—makes sense. Although the patent examiner may come closer than any other actor within the government system to having the relevant “ordinary skill in the art,” the examiner's decision to grant a patent should nonetheless be viewed with caution. For a number of reasons, examiners are unlikely to deny even questionable applications.¹¹ Most notably, because the application process is *ex parte*, and the applicants themselves have less than optimal incentives to disclose relevant prior art, the examiner must herself find such art.¹² Because of the volume of patent applications, the examiner typically conducts this search in a very short period of time (approximately eighteen hours, according to one estimate).¹³ The time pressure faced by the examiner is especially acute in areas like software and business methods where the art is diffuse.¹⁴ Additionally, examiners are biased in favor of granting patents. This bias emerges because they are evaluated according to the number of final dispositions they record, and it is much easier to secure a final disposition by granting a patent than by denying one.¹⁵

Of course, substantially greater levels of funding for the USPTO would allow examiners to spend more time finding prior art on each patent. However, because most patents are neither litigated nor licensed, it may be inefficient for examiners to conduct an exhaustive search for prior art on each patent.¹⁶ A discussion of the level of scrutiny each patent

11. See FTC REPORT, *supra* note 4, ch. 5, at 4-6 (discussing why patent grants may be questionable, such as increase in the number of patent applications and decrease in amount of time spent evaluating a patent application). A partial list of recent publications pointing out the deficiencies of the examination process includes: Shubha Ghosh & Jay Kesan, *What Do Patents Purchase: In Search of Optimal Ignorance in the Patent Office*, 40 HOUS. L. REV. 1219 (2004); Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495 (2001); Cecil D. Quillen, Jr. & Ogden H. Webster, *Continuing Patent Applications and Performance of the U.S. Patent and Trademark Office*, 11 FED. CIR. B.J. 1 (2001); John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305.

12. FTC REPORT, *supra* note 3, ch.5, at 7, 8 (stating that a patent applicant has not duty to search for prior art and that a patent examiner is “largely on his or her own in conducting prior art searches”).

13. Lemley, *supra* note 11, at 1500; see FTC REPORT, *supra* note 4, ch. 5, at 5 (giving estimates of time to examine a patent application from start to finish to range from eight hours up to twenty-five hours).

14. FTC REPORT, *supra* note 4, ch. 5, at 7.

15. Thomas, *supra* note 11, at 324.

16. See Lemley, *supra* note 11, at 1501 (“Of the roughly two million patents currently in force [as of 2001], only a tiny number are the basis for lawsuits each year.”) (internal footnote omitted).

should optimally receive is beyond the scope of this Article.¹⁷ One point is clear, however: absent substantial change in the USPTO examination process for ordinary patent grants, the significant institutional bias in favor of grants should overcome any strong presumption in favor of agency competence in the fact-finding associated with such grants.¹⁸

In contrast, when the USPTO denies a patent, the fact-finding associated with the USPTO's analysis is much more likely to be accurate. This is because the patent examiner has the burden of demonstrating the unpatentability of the applicant's assertions, and thus the examiner is required to assemble evidence supporting the rejection.¹⁹ It is therefore appropriate for the Federal Circuit to treat a denial different than a grant. Differential treatment is particularly appropriate because, before the denial ever reaches the Federal Circuit, the denial will have gone through review at the Board of Patent Appeals and Interferences (BPAI).²⁰ The three-member review board of the BPAI, which is composed of judges skilled in the relevant law and frequently even in the relevant science, is hardly a rubber stamp for examiner decisions to deny a patent. To the contrary, in fiscal year 2002, the BPAI squarely affirmed examiner denials in only 29.9% of cases; it reversed such denials in 37.4% of cases.²¹

III. NONOBVIOUSNESS: THE ROLE OF DEFERENCE TO USPTO PATENT DENIALS

Both reports' recommendations on nonobviousness underscore the validity of USPTO fact-finding in the context of patent denials. In at least

17. The issue is hard to decide because many of the possible costs of "bad" patents are so difficult to quantify. In particular, it is very difficult to quantify the costs associated with bad patents that are neither licensed nor litigated. For example, although there is some evidence that small firms avoid research and development in areas where larger firms have a significant patent presence, see Josh Lerner, *Patenting in the Shadow of Competitors*, 38 J.L. & ECON. 463 (1995), the full extent of such behavior is not known. Even if it were known, moreover, the loss to social welfare would be difficult to quantify. For a discussion of these and other problems associated with quantifying the cost of bad patents, see Rai, *supra* note 4, at 1081-83.

18. Notably, changing the burden placed upon the entity challenging patent validity would not require building the complex coalitions necessary for legislative action. Rather, the Federal Circuit would merely have to alter its requirement that "clear and convincing evidence" is needed to overcome the presumption of patent validity.

19. See FTC REPORT, *supra* note 4, ch. 5, at 8.

20. 35 U.S.C. § 134 (2000).

21. See Bd. of Patent Appeals & Interferences, USPTO, Receipts and Dispositions by Technology Centers for *Ex Parte* Appeals, available at <http://www.uspto.gov/web/offices/dcom/bpai/docs/receipts/fy2002.htm> (last modified Nov. 16, 2003) (listing statistics).

three of the areas where the reports make nonobviousness-related recommendations—combining prior art references, business method patents, and DNA patents—one key problem has been the Federal Circuit’s failure to recognize that the USPTO can, and should, be allowed to insert its knowledge of the art into the patent examination process. While the FTC directly addresses this problem, the NAS analysis is less clear, particularly with respect to business method patents.

The FTC Report recommends that the Federal Circuit relax application of its so-called “suggestion” test for combining references to show obviousness.²² Although this recommendation applies to all cases before the Federal Circuit, whether based on appeals from a district court or from the USPTO, the FTC rightly focuses on some recent Federal Circuit opinions in which the court has forbidden the USPTO from combining references based on common knowledge in the art.²³ The examiner instead must point to a specific written reference that suggests the combination is obvious.²⁴ Because skilled scientists and engineers have little motivation to publish what is already well known, this requirement may make the examiner’s task virtually impossible.

A similar lack of deference to USPTO fact-finding, in this case fact-finding regarding what constitutes appropriate prior art, is the root cause of the problem in one of the nonobviousness contexts on which the NAS Study focuses—the context of gene patents.²⁵ As I have argued at length elsewhere,²⁶ the Federal Circuit’s refusal to engage USPTO arguments that DNA isolation methods routinely used by genomic scientists should be considered appropriate prior art in sequence patentability determinations has effectively eliminated the nonobviousness standard as a bar to patentability in sequence cases.²⁷ The NAS Study recognizes the Federal

22. FTC REPORT, *supra* note 4, ch. 4, at 15.

23. *Id.* at 10-11.

24. *Id.* at 10; *see, e.g., In re Sang-Su Lee*, 277 F.3d 1338 (Fed. Cir. 2002) (noting that a suggestion to combine *cannot* rely on “common knowledge and common sense”); *see also In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999) (overturning, on improper combination of prior art grounds, a USPTO determination that a patent application for a plastic garbage bag decorated to look like a jack-o-lantern when filled with trash or leaves was obvious).

25. NAS STUDY, *supra* note 4, at 75-78 (discussing in particular *In re Deuel*, 51 F.3d 1552 (Fed. Cir. 1995)).

26. Rai, *supra* note 4, at 1069.

27. Some have argued that the *Deuel* case may have represented an attempt by the Federal Circuit to preserve patentability of DNA sequences that the court (like the USPTO) knew were technically obvious on the grounds that such sequences are nonetheless expensive to generate. *See, e.g., Karen Boyd, Nonobviousness and the Biotechnology Industry: A Proposal for a Doctrine of Economic Nonobviousness*, 12 BERKELEY TECH.

Circuit's failure to examine whether gene sequence patents are technically inventive,²⁸ but it does not note the extent to which the problem has resulted from the Federal Circuit's rejection of the USPTO's technically accurate factual findings regarding appropriate prior art.

Similarly, in the context of discussing business methods, the NAS Study recognizes but does not fully diagnose the problem. The NAS observes that many obvious business method patents may have been granted because of the difficulty examiners face in finding written references stating common knowledge in the art.²⁹ Rather than suggesting that the Federal Circuit allow some role for the knowledge and skill of the examiner, however, the NAS recommends that expert testimony be used.³⁰ Moreover, because testimony by a USPTO-chosen expert during the *ex parte* proceeding might be inappropriately biased against the applicant,³¹ expert testimony should come in during the post-grant review, where experts on both sides could testify.³²

Thus, the NAS approach, like that of certain Federal Circuit opinions, forbids examiners from relying on their ordinary knowledge. Indeed, because the NAS considers *ex parte* expert testimony to be inappropriate as well,³³ no patent could be denied based upon ordinary knowledge unless it happened to be challenged in a post-grant review proceeding.

The argument in favor of the NAS approach is that it would ensure that the system produced fewer false negatives—denials of patents that should have been granted. The NAS Study hints at this rationale by em-

L.J. 311 (1997). This rationale seems dubious since DNA isolation techniques are relatively inexpensive. A better "economic nonobviousness" argument might rest on the need for expensive follow-on development. Presumably this rationale would be particularly persuasive when the sequence patent covers what is effectively a therapeutic. However, the doctrinal mechanism by which the *Deuel* case reduces the nonobviousness standard for DNA patents—eliminating DNA isolation methods as relevant prior art—also leads to a situation where DNA patent scope is quite narrow. Although narrow scope is not necessarily problematic when such DNA patents represent research tools (and, indeed, may be affirmatively useful in reducing the transaction costs associated with licensing), narrow scope may be quite problematic for DNA patents that are effectively therapeutic products and hence need significant protection to induce follow-on development.

28. NAS STUDY, *supra* note 4, at 68.

29. *Id.* at 74 (noting that "scientists, artisans, and creative people generally speaking strive to publish *non-obvious* information") (emphasis original).

30. *Id.* at 68.

31. *Id.* at 74.

32. *Id.*

33. The NAS does not explain why, given the pressure on examiners to grant patents, the examiner would pick an expert biased against granting the patent.

phasizing the problem of hindsight bias.³⁴ Although hindsight bias is a legitimate concern, the NAS approach would probably result in a large number of false positives—grants of patents that should have been denied. Because the USPTO's ordinary role in evaluating patents would be greatly diminished, numerous cases would turn on the use of post-grant review proceedings. Given that such proceedings might not be used, and would also be quite a bit more expensive than ordinary patent review, placing so much emphasis for weeding out bad patents on these proceedings is probably unwise. Thus, the FTC's approach, which uses post-grant review but also capitalizes on the USPTO's relative competence in issuing patent denials, is preferable.

Indeed, we might consider taking the FTC's emphasis on the initial patent denial one step further. Insuring that examiners do in fact have a minimum level of skill in the art is one mechanism for channeling more questionable patents into the initial denial category. Although examiner skill is not especially problematic in areas like biotechnology, where the USPTO has scores of Ph.D.s, it may be problematic in areas like software and business methods. As contrasted with requiring each patent application to be scrutinized exhaustively for prior art, insuring a minimum level of skill in the art should be relatively inexpensive.

Arguably, the 1999 Supreme Court decision in *Dickinson v. Zurko* admonishes the Federal Circuit on the very question of deference to USPTO fact-finding in the context of a patent denial.³⁵ In *Zurko*, the Court held that USPTO fact-finding should be reviewed under the highly deferential standard of review established under the Administrative Procedure Act (APA).³⁶ The Court squarely rejected the Federal Circuit's contention that the less deferential clearly erroneous standard applied.³⁷

34. Hindsight bias is the tendency of decision makers to view inventions as obvious in retrospect.

35. 527 U.S. 150 (1999).

36. *Id.*

37. *Id.* In the case below, the Federal Circuit had held that clearly erroneous review applied and that such review was more rigorous than the Administrative Procedure Act (APA) standard. *In re Zurko*, 142 F.3d 1447, 1454 (Fed. Cir. 1998), *rev'd sub nom.* *Dickinson v. Zurko*, 527 U.S. 150 (1999). In a recent article, administrative law scholar Paul Verkuil suggests that the clearly erroneous standard might be thought of as resulting in affirmance 70-80% of the time. Verkuil believes the two APA-based standards of review, substantial evidence review and arbitrary and capricious review, would respectively result in affirmance 75-85% and 85-90% of the time. Paul R. Verkuil, *An Outcomes Analysis of Scope of Review Standards*, 44 WM. & MARY L. REV. 679, 689 (2002). I discuss the differences, if any, between substantial evidence and arbitrary and capricious review further in the text.

So, one might be puzzled at the Federal Circuit's decision making. With respect to gene patents, one could argue that *In re Deuel*, which rejected the USPTO's factual determinations regarding appropriate prior art and thereby virtually eliminated the nonobviousness standard for DNA patents,³⁸ was decided in 1995 and thus would perhaps be decided differently in the post-*Zurko* landscape. Yet, even more puzzling is the 2002 *In re Lee* decision, a case involving electronic video display technology, in which the court specifically directed the examiner to refrain from combining prior art references based on common sense or general knowledge in the field.³⁹

In part the Federal Circuit has been able to resist the natural implications of *Zurko* because the Supreme Court was not presented with, and hence did not decide, the specific question of whether the appropriate standard of APA-based review was "substantial evidence" or "arbitrary and capricious."⁴⁰ Substantial evidence review, which focuses on evidence within the four corners of the agency record, applies to formal agency proceedings;⁴¹ arbitrary and capricious review applies to informal proceedings.⁴² Although several of the Justices, including Justice Breyer, indicated at oral argument that arbitrary and capricious review might be most appropriate given the *ex parte*, informal nature of the USPTO proceedings,⁴³ Justice Breyer's opinion for the majority squarely addressed only the threshold issue of APA applicability briefed by the parties. The opinion did suggest in passing, however, that the degree of appellate intrusiveness allowed by the two APA standards was similar.⁴⁴

38. 51 F.3d 1552 (Fed. Cir. 1995).

39. 277 F.3d 1338 (Fed. Cir. 2002).

40. 527 U.S. 150 (1999).

41. 5 U.S.C. § 706(2)(E) (2000) (stating that a reviewing court shall "set aside agency action . . . unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute . . .").

42. 5 U.S.C. § 706(2)(A).

43. Transcript of Oral Argument at *4-*8, *Dickinson v. Zurko*, 527 U.S. 150 (1999) (No. 98-377), available at 1999 WL 190969.

44. *Dickinson v. Zurko*, 527 U.S. 150, 158 (1999) (citing association of Ass'n of Data Processing Serv. Orgs., Inc. v. Bd. of Governors of Fed. Reserve Sys., 745 F.2d 677, 683-84 (D.C. Cir. 1984), for that proposition). Contrary to Justice Breyer, a few Supreme Court opinions, as well as commentary by some administrative law scholars, indicate that substantial evidence is somewhat less deferential than arbitrary and capricious review, primarily because in the former context the agency must put all of its reasoning on the record. Verkuil, *supra* note 37, at 689 (positing that arbitrary and capricious review yields a somewhat higher affirmance rate than substantial evidence review); see also *Am. Paper Inst., Inc. v. Am. Elec. Power Serv. Corp.*, 461 U.S. 402, 412-13 & n.7

The Court probably did not contemplate the liberties that the Federal Circuit would take with the legal gap left open by the *Zurko* decision. Contrary to Justice Breyer's suggestion at the *Zurko* oral argument, the Federal Circuit has determined that the relevant standard of review is substantial evidence.⁴⁵ Additionally, contrary to the suggestion of the *Zurko* majority, it has argued that this standard is considerably less deferential than the arbitrary and capricious standard.⁴⁶

Cases like *In re Lee* underscore the odd fit between stringent substantial evidence review and informal proceedings. In *Lee*, the Federal Circuit emphasized that the examiner's knowledge of the technology could not count as "evidence."⁴⁷ But since the examiner cannot call witnesses to testify about common knowledge in an industry in an *ex parte* proceeding, the examiner is forced to try to find a reference stating the common knowledge. Such a search is resource-intensive, if not futile. Either the examiner's knowledge should count as evidence or the Federal Circuit should adopt arbitrary and capricious review, which does not require that all relevant information be "on the record" and is also the more logical standard of review for informal proceedings like the USPTO examination process.

Greater deference to USPTO fact-finding in the context of nonobviousness-based patent denials, coupled with less deference to patent grants, would probably increase the number of false negatives in the system. In other words, some valid patent applications would be denied. But there is no reason to believe that false negatives are worse than false positives—that is, the granting of invalid patents. The current system appears to be tilted in favor of false positives, and these reforms would be a step towards redressing the balance.

IV. POST-GRANT REVIEW PROCEEDINGS: PRESUMPTION OF VALIDITY

The FTC Report recommends implementing a post-grant review procedure that would allow third parties to raise novelty, nonobviousness, written description, enablement, and utility questions.⁴⁸ An administrative patent judge would preside over the review, which would be a trial-type

(1983) (indicating that the arbitrary and capricious standard is more lenient than the substantial evidence standard).

45. *In re Gartside*, 203 F.3d 1305, 1312 (2000).

46. *Id.*

47. 277 F.3d 1338 (Fed. Cir. 2002).

48. FTC REPORT, *supra* note 4, ch. 5, at 23-24.

proceeding with opportunity for cross-examination and limited discovery.⁴⁹ Similarly, the NAS Study recommends that Congress create an “Open Review” procedure to enable third parties to challenge the validity of issued patents in a trial-type administrative proceeding conducted by the PTO.⁵⁰

Both reports favor such proceedings on the grounds that such proceedings would allow interested private parties to bring forward information about prior art.⁵¹ Notably, patents that are challenged in post-grant review are likely to be the ones that would otherwise be litigated.⁵² Addressing potentially invalidating information about such patents in the context of a USPTO administrative proceeding should be significantly cheaper than in the trial context.⁵³ Although important questions regarding protection against undue patentee harassment and the length of time a patent would remain subject to post-grant review would need to be addressed, the argument in favor of post-grant review proceedings is persuasive.

Given the time and expense associated with post-grant review proceedings, the manner in which courts treat the conclusions reached in those proceedings is important. The FTC Report argues that Congress, in enacting legislation establishing post-grant review, should require significant judicial deference to determinations made in such proceedings.⁵⁴ Specifically, the Report suggests that courts should review deferentially not only underlying USPTO fact-finding, but also the ultimate legal conclusions regarding validity reached by the USPTO.⁵⁵ The FTC’s recommendation has merit. More so than in granting patents, or perhaps even in denying them, the USPTO is likely to be accurate in its post-grant reviews.

49. *Id.* at 24.

50. NAS STUDY, *supra* note 4, at 79.

51. See FTC REPORT, *supra*, note 4, ch. 5, at 19 (“Post-grant review offers substantial opportunities to improve patent quality by drawing upon the information and expertise of competitors. . . . [A] competitor engaged in an administrative challenge to a patent will be well-positioned to supply the best prior art.”); NAS STUDY, *supra* note 4, at 79.

52. Empirical study of opposition proceedings at the European Patent Office indicates that “high-value” patents tend to be opposed. Stuart Graham et al., *Patent Quality Control: A Comparison of U.S. Patent Re-examinations and European Patent Oppositions*, in PATENTS IN THE KNOWLEDGE-BASED ECONOMY (Wesley Cohen & Steve Merrill eds., 2003).

53. This assumes, of course, that the administrative process is appropriately streamlined and that the agency’s comparative technical and legal expertise will allow it to resolve validity issues more expeditiously than would a non-specialist district court. The separation of the validity issue from the question of infringement, a move that is often not possible in district courts, should also contribute to efficiency.

54. FTC REPORT, *supra* note 4, ch. 5, at 24 & n.173.

55. *Id.* at 24.

The USPTO will presumably have access not only to information about ordinary skill in the art but also to most of the relevant prior art.⁵⁶ Plenary review of the patent validity question, to the extent it turns on facts particular to the case, would not only be inefficient, but it would be likely to yield inaccurate results. Moreover, to the extent that courts, particularly the Federal Circuit, might evade deference on the factual questions underlying obviousness and other validity issues by simply asserting that validity is a legal question to be reviewed *de novo*,⁵⁷ the FTC's suggestion that Congress mandate deference on legal questions is quite prescient.⁵⁸ Conversely, the NAS Study's failure to specify the level of deference that courts should give USPTO determinations made in post-grant review proceedings is a missed opportunity.

V. A CAUTIONARY NOTE ON OUTCOMES (AND EVALUATION THEREOF)

One might reasonably ask whether tweaking deference levels by altering burdens of proof and standards of review actually affects case outcomes. Arguably, legal doctrines regarding deference are, in actual application, sufficiently indeterminate that they do not affect judicial decision-making. Indeed, the Federal Circuit's apparent resistance to the implications of *Zurko*, discussed above, is not an isolated case; rather, it parallels resistance by other appellate courts to the Supreme Court's demands of deference to agency decision making.⁵⁹

No empirical study of which I am aware specifically focuses on case outcomes as a function of modifications in deference levels. One possible

56. See *supra* note 51 and accompanying text.

57. Arguably, the Federal Circuit has made precisely this move in the area of claim construction.

58. FTC REPORT, *supra* note 4, ch. 5, at 24. (“[S]uch a post-grant proceeding [should] be declared a delegation of authority permitting the ensuing PTO conclusions of law to carry the force of law.”). One important difficulty with the FTC recommendation is that there might be cases where the court's decision to reverse a post-grant review validity determination made by the USPTO resulted not from disagreement over facts but, rather, genuine disagreement over a general principle of law or policy. Giving the USPTO primary power over legal interpretations and policy determinations is problematic. A discussion of which patent institution should have primary interpretive and policy-making power is, however, beyond the scope of this paper. For some thoughts on that question, see generally Rai, *supra* note 4.

59. See Peter H. Schuck & E. Donald Elliott, *To the Chevron Station: An Empirical Study of Federal Administrative Law*, 1990 DUKE L.J. 984, 1027 n.114 (discussing resistance by D.C. Circuit and other lower courts of Supreme Court directives demanding deference).

study might look at the percentage of patents invalidated before and after *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, the Federal Circuit's first decision to hold that challengers prove invalidity by "clear and convincing evidence."⁶⁰

John Allison and Mark Lemley's study of judicial patent decisions between 1989 and 1996 does indicate that during this period courts held patents invalid in approximately 50% of the cases where validity was at issue and decided.⁶¹ In contrast, in the pre-Federal Circuit era, courts upheld the validity of patents in approximately 30-40% of the cases where validity was at issue.⁶² This data suggests that if the Federal Circuit were to reverse course and establish a preponderance of the evidence standard for challenging patent grants, lower courts might well invalidate patents more frequently.⁶³

However, any analysis of the effect of a change in burden of proof that is based on data from litigated cases must necessarily be quite speculative. Litigated cases represent only a small, nonrandom sample of relevant case disputes. Hence, selection bias problems are pervasive. George Priest and Benjamin Klein's "divergent expectations" model of selection bias posits that parties litigate civil disputes only when the result of litigation under the applicable set of standards is unclear.⁶⁴ When the result is unclear, each side has a 50% chance of winning.⁶⁵ Thus, in the context of patent grants, the model would predict a 50% invalidation rate irrespective of what burden of proof was employed.⁶⁶

60. 725 F.2d 1350, 1360 (Fed. Cir. 1984). A rigorous study would of course not only look at raw percentages but would also attempt to control for other factors.

61. John Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205-06 (1998). In contrast, in the pre-Federal Circuit era, it appears courts upheld the validity of patents in approximately 30-40% of the cases where validity was at issue.

62. See, e.g., P.J. Federico, *Adjudicated Patents, 1948-54*, 38 J. PAT. & TRADEMARK OFF. SOC'Y 233, 236 (1956).

63. Voluntary adoption by the Federal Circuit of a preponderance of the evidence standard would of course mean that the Federal Circuit was itself serious about treating patents more skeptically.

64. See generally George Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984).

65. *Id.*

66. *Id.* On the other hand, the applicability of the Priest/Klein model to patent cases is not entirely clear. The 30% validity rate common in the era before the Federal Circuit itself suggests that various assumptions that underlie the model may not apply. For a critique of these assumptions, see Daniel Kessler et al., *Explaining Deviations from the Fifty-Percent Rule: A Multimodal Approach to the Selection for Litigation*, 25 J. LEGAL STUD. 233 (1996).

The difficulty of evaluating whether alteration in a standard of review—in the case of the Federal Circuit, more lenient court review of USPTO proceedings—changes outcomes is perhaps even greater. Even assuming no selection bias of the Priest/Klein variety and assiduous judicial adherence to the lenient standard, the alteration may not lead to lower reversal rates. To the extent that the agency incorporates the liberalization of review standards into its work, it may fail to justify its conclusions as well as before the liberalization. The net result may be a similar percentage of reversals.

Perhaps not surprisingly, the few empirical studies that have examined the relationship between case outcome and standard of review yield mixed conclusions. In studying judicial review of the Social Security Administration (SSA), the Veterans Administration (VA), and agencies charged with interpreting the Freedom of Information Act (FOIA), Paul Verkuil found little connection between the standard of review purportedly employed and the judicial affirmance rate.⁶⁷ Under the purportedly lenient substantial evidence standard, courts affirmed SSA decisions only 50% of the time.⁶⁸ Under the purportedly stringent *de novo* standard, courts affirmed agency FOIA decisions 90% of the time.⁶⁹ In contrast, Peter Schuck and Donald Elliott determined that, at least in the short term, the Supreme Court decision in *Chevron*,⁷⁰ which mandated relatively deferential review of agencies, significantly affected judicial rates of affirmance, reversal, and remand.⁷¹

This is not to suggest that large-scale empirical work to gauge outcomes should not be done. To the contrary, if tweaking of deference levels is going to be effective, particularly in influencing judges, we must have quantitative—as well as qualitative—evidence on outcomes.⁷² Studying the phenomenon is necessary to guide it properly.

VI. CONCLUSION

The question of which patent institution should have primary power to make the factual determinations central to patent validity does not have a

67. Verkuil, *supra* note 37, at 719.

68. *Id.*

69. *Id.*

70. *Chevron v. Natural Res. Def. Council*, 467 U.S. 837 (1984).

71. Schuck & Elliot, *supra* note 59, at 1030-32 (finding change in appellate dispositions that was significant at the 99% level).

72. Together with Craig Nard and David Almeling, I am currently analyzing USPTO reversal rates at the Federal Circuit before the Federal Circuit decision in *Zurko* and after its decision in *Gartside*.

single answer. Depending on the context, either the ordinary USPTO examination, a post-grant review examination, or the court system will be the most appropriate venue for accurate and efficient fact-finding. Thus attempts of the sort made in both reports, but particularly by the FTC, to allocate fact-finding power in a manner that is sensitive to institutional context make sense. The extent to which finely calibrated attempts to allocate power actually works is of course an empirical question. Much quantitative and qualitative work needs to be done on this question, not only because such work advances knowledge in the area, but also because the results may actually help to allocate power properly in the future.

REFORMING PATENT VALIDITY LITIGATION: THE “DUBIOUS PREPONDERANCE”

By Mark D. Janis[†]

TABLE OF CONTENTS

I.	INTRODUCTION	923
II.	EXPRESSIVE AND INSTRUMENTAL FUNCTIONS OF PRESUMPTIONS	925
III.	EXPRESSIVE FUNCTION OF THE PRESUMPTION OF VALIDITY	927
A.	Pre-Federal Circuit and Early Federal Circuit Cases on the Presumption of Validity.....	928
B.	Modern Federal Circuit Cases	930
C.	Trademark Cases: Experience with the Preponderance Standard	932
D.	Conclusions Regarding the Presumption’s Expressive Function	935
IV.	INSTRUMENTAL FUNCTION OF THE PRESUMPTION OF VALIDITY.....	935
A.	Litigating Validity Versus Litigating Scope.....	937
B.	The Presumption of Validity as a Channeling Mechanism	938
V.	CONCLUSION	941

I. INTRODUCTION

In an environment in which corporate officials complain to Congress about the existence of patent “trolls,”¹ perhaps it should not come as a surprise that patent law reform proposals are finding a receptive audience. Major reports on the patent system compiled by the Federal Trade Commission (FTC)² and the National Academy of Sciences (NAS)³ advocate a number of reforms touching on both the administrative processes of the patent system and the treatment of patent rights in the courts. While the

© 2004 Mark D. Janis

[†] Professor of Law and H. Blair & Joan V. White Intellectual Property Law Scholar, University of Iowa College of Law.

1. See *Patent Quality Improvement: Hearings Before the Subcomm. on Courts, the Internet and Intellectual Property of the House Comm. on the Judiciary*, 198th Cong. 21 (2003) [hereinafter *Patent Quality Improvement Hearings*] (testimony of David Simon) (defining patent trolls as “patent system bottom feeders” who buy “improvidently-granted patents from distressed companies for the sole purpose of suing legitimate businesses”).

2. FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (2003) [hereinafter *FTC REPORT*], available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

3. NAT’L ACAD. OF SCIS., A PATENT SYSTEM FOR THE 21ST CENTURY (Stephen A. Merrill et al. eds., forthcoming 2004) [hereinafter *NAS STUDY*], available at <http://www.nap.edu/books/0309089107.html>.

reform proposals are not particularly notable for their originality,⁴ they are presented with a tone of urgency that has not been heard for some years.

The FTC Report identifies patent litigation as one area in need of scrutiny and selects the presumption of patent validity⁵ in patent litigation as a particular target for reform. According to the FTC Report, the *existence* of the presumption is “not objectionable” because the patent challenger should bear the burden of overcoming the U.S. Patent and Trademark Office’s (USPTO) determination of patentability.⁶ The Report’s objections focus on the standard of evidence for overcoming the presumption, and here, the FTC can discern “no persuasive reason” why the existing clear and convincing evidence standard should be retained.⁷ Instead, patent challengers should be able to overcome the presumption of validity by evidence that meets the preponderance standard, according to the Report.⁸

In one respect, it is not surprising that the FTC has focused on the presumption of patent validity. The presumption is an easy target; it enhances the leverage of the patent trolls.⁹ However, in another respect, the new focus on the presumption of validity may seem startling, at least to those within the patent community. The Federal Circuit’s pronouncements on the presumption of validity have become routine. In dozens of decisions, the Federal Circuit has repeated core principles: the patent challenger bears the ultimate burden of persuasion on patent invalidity;¹⁰ to carry this burden, the patent challenger must establish relevant facts by clear and convincing evidence;¹¹ clear and convincing evidence is “evidence which

4. Most of the proposals are eerily familiar, having been proposed—and discarded—in previous episodes of patent law reform stretching back to the 19th Century. I have previously commented on the reiterative nature of patent law reform. Mark D. Janis, *Patent Abolitionism*, 17 BERKELEY TECH. L.J. 899 (2002).

5. 35 U.S.C. § 282 (2000) (providing in relevant part that, “A patent shall be presumed valid. Each claim of a patent . . . shall be presumed valid independently of the validity of other claims The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.”).

6. FTC REPORT, *supra* note 2, ch. 5, at 28.

7. *Id.*

8. *Id.*

9. According to David Simon, “These patent trolls have the presumption of validity on their side. It is difficult to convince a jury of patent invalidity in light of the heightened evidentiary standard of clear and convincing evidence.” *Patent Improvement Quality Hearings*, *supra* note 1, at 4 (testimony of David Simon).

10. *See, e.g.*, *New England Braiding Co. v. A.W. Chesterton Co.*, 970 F.2d 878, 882 (Fed. Cir. 1992) (“The presumption acts as a procedural device which places the burden of going forward with evidence and the ultimate burden of persuasion of invalidity at trial on the alleged infringer.”).

11. *See, e.g.*, *Geneva Pharm., Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373 (Fed. Cir. 2003) (upholding summary judgment of invalidity for double patenting).

produces in the mind of the trier of fact an abiding conviction that the truth of the factual contentions is highly probable.”¹²

This Article critically examines the FTC’s proposals concerning the presumption of validity. In Part II, I identify two general functions of presumptions in law, the expressive and instrumental functions. In Part III, I argue that the FTC’s proposal overlooks the expressive function of the presumption of patent validity and I consider the insights that might be gained from considering the expressive function. In Part IV, I analyze the FTC’s arguments touching on the instrumental function of the presumption of validity, and conclude that they are plausible, but deserve refinement and further probing.

II. EXPRESSIVE AND INSTRUMENTAL FUNCTIONS OF PRESUMPTIONS

The FTC Report’s proposal to reform the presumption of validity provokes some fundamental questions about patent validity adjudication. Most directly, the Report encourages the patent community to think more carefully about what the presumption of validity is designed to accomplish. We might answer the question by returning to first principles—by considering the functions that presumptions are generally designed to perform in law and evaluating the reform proposals in light of those functions.

The Supreme Court has provided a framework for understanding presumptions and standards of evidence for overcoming presumptions. In *Addington v. Texas*,¹³ a civil commitment case involving a debate over the applicability of the clear and convincing standard (as opposed to the beyond a reasonable doubt standard), the Court attributed two functions to standards of proof: (1) “to indicate the relative importance attached to the ultimate decision;”¹⁴ and (2) to allocate the risk of error between the litigants.¹⁵ The first may be described as the “expressive” function and the second as an “instrumental” function.

Evaluating a rule in light of its expressive function requires identifying the rule’s overlying message and assessing that message’s impact. Scholars have recognized that many debates “over the appropriate content of law” are in some part “debates over the statement that law makes”—that

12. *Buildex, Inc. v. Kason Indus., Inc.*, 849 F.2d 1461, 1463 (Fed. Cir. 1988) (internal quotation marks and citation omitted).

13. 441 U.S. 418 (1979).

14. *Id.* at 423.

15. *Id.*

is, debates over law's expressive function.¹⁶ A legal rule might be expressive in a weaker and a stronger sense. In the weaker sense, a rule may be purely symbolic, intended to accomplish nothing other than to make a statement, and it may succeed even if it is never actually enforced.¹⁷ In the stronger sense, a rule might be designed to provide a baseline for the eventual fashioning of new norms of behavior, without a tight connection between the rule and the behavior. The rule is designed to accomplish something other than merely to make a statement, but the statement is at least as important as the precise manner in which the rule is enforced.¹⁸ For example, the presumption of innocence in criminal cases is emblematic of our paramount concern about individual freedom and our deeply-rooted distrust of the power of the state. If the legislature proposed to "reform" the presumption of innocence, any thoughtful analysis of that proposal would need to consider how the proposal might alter the overlying message associated with the presumption and the broad social consequences of that alteration. An analysis that considered only the projected effects on actual case outcomes would be incomplete.

Evaluating a rule in light of its instrumental function requires assessing how the rule affects case outcomes. For example, in a criminal case, we might justify the strong presumption of innocence and its associated beyond a reasonable doubt standard by asserting that the overwhelming share of the risk of error (meaning an erroneous legal determination deriving from the found facts) should be allocated to the state.¹⁹ By contrast, in an ordinary civil case for damages, we might argue that no particular presumption is justified; the risk of error should be allocated equally among the parties, and thus application of a preponderance of the evidence standard would be appropriate.²⁰ If these respective classes of cases are considered to lie at opposite extremes of a spectrum, then there may be a class of intermediate cases that correlate with an intermediate standard. Civil cases may fall into this intermediate zone when the interests at stake are more important than loss of money, and in such cases, it would be inappropriate to allocate the risk of error equally. Thus, a moderate presumption should apply coupled to an intermediate standard, such as the clear and convincing standard, for overcoming the presumption. Accordingly,

16. *E.g.*, Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2051 (1996).

17. *Id.* at 2023 (asserting that a proscription against flag-burning is an example of a rule that is expressive in the weaker sense, in that the flag-burning rule is not necessarily designed with the expectation that it will deter potential flag-burners).

18. *Id.* at 2025-27.

19. *Addington*, 441 U.S. at 423-24 (making this argument).

20. *Id.*

an analysis of a legal presumption from an instrumental perspective takes the presumption as a tool for achieving precise outcomes and assesses whether the presumption facilitates those outcomes.

We can understand the presumption of patent validity against this general backdrop. The FTC Report's proposed reforms to the presumption of validity should be considered in light of both the expressive and instrumental dimensions of the presumption. I take up that task in the remainder of this Article.

III. EXPRESSIVE FUNCTION OF THE PRESUMPTION OF VALIDITY

Consideration of law's expressive function has significant implications for patent law, a point that I develop in more detail elsewhere.²¹ Evaluating the FTC Report's reform proposals by considering the expressive function of the presumption of validity reveals three important insights. First, acknowledgment of the presumption's expressive function reminds us that the fact that we *have* a presumption of patent validity is as significant as the precise verbal formulation that we use for the standard of evidence for overcoming the presumption. Second, while it may be easy enough to manipulate that verbal formulation, it may be a very different and very subtle exercise to control the overlying message that the presumption of patent validity delivers, especially outside the patent community. Third, manipulating the verbal formulation without controlling the overlying message may yield some unpleasant surprises.

In particular, "reforming" the words of the evidentiary standard without controlling the overlying message may, ironically, result in changing everything while changing nothing. That is, one possible outcome of the proposed change to the preponderance standard for overcoming the presumption of patent validity is that the change will cause little difference in the outcomes of cases but, at least in the short term, those outside the patent community may perceive a dramatic change in the overlying message. Thus, judges will reach the same result that they would have reached under the old standard, substituting the words of the new standard but the perception may be that patents are less secure and the patent system deserves less respect.

The Supreme Court made a similar point in *Addington*. The Court expressed doubt about whether the choice of standard between clear and convincing and preponderance of the evidence would often make a difference in case outcomes, especially since it would be unwise to expect that

21. Mark D. Janis, *Patent Law's Expressive Quality* (Working Paper, 2004).

fact finders, particularly lay juries, would be adept at understanding the nuanced differences between the standards.²² At the same time, the Court resisted the notion that adoption of a particular standard of proof was a mere “empty semantic exercise.”²³

To illustrate the point about the potential for divergence between the words of the evidentiary standard and the overlying message of the presumption of validity, I consider three sets of cases: (1) cases immediately preceding the creation of the Federal Circuit, compared to early Federal Circuit cases; (2) more recent Federal Circuit cases; and (3) trademark cases adopting the preponderance standard.

A. Pre-Federal Circuit and Early Federal Circuit Cases on the Presumption of Validity

The adoption of the clear and convincing standard is widely attributed to the Federal Circuit, as the FTC Report points out.²⁴ The perception that the Federal Circuit enhanced the effect of the presumption of validity coincides with the generally received wisdom that the Federal Circuit adopted a pro-patent bias early in its tenure.²⁵ In turn, this correlates with one of the FTC Report’s themes: that the balance between patent and competition policy has swung too far in favor of patents.²⁶

The actual story is more complex. Contrary to common perception, before the creation of the Federal Circuit, most appellate courts had already adopted the clear and convincing standard of evidence for overcoming the presumption of patent validity.²⁷ Only the Sixth Circuit appeared to have

22. *Addington*, 441 U.S. at 424-25.

23. *Id.* at 425.

24. FTC REPORT, *supra* note 2, ch. 5, at 26 n.183.

25. Mark D. Janis, *Patent Law in the Age of the Invisible Supreme Court*, 2001 U. ILL. L. REV. 387, 399-401.

26. *E.g.*, FTC REPORT, *supra* note 2, ch. 2, at 18-23.

27. It appears that the Courts of Appeals for the Second, Third, Fifth, Seventh, Eighth, and Ninth Circuits all had adopted the clear and convincing standard. *See, e.g.*, 2 DONALD S. CHISUM, PATENTS § 5.06 n.84 (2003) (citing relevant authority). For representative language, see, for example., *Manufacturing Research Corp. v. Graybar Elec. Co.*, 679 F.2d 1355, 1360 (11th Cir. 1982) (noting that the burden of establishing invalidity “is generally an onerous one” and requires the patent challenger to “demonstrate invalidity by clear and convincing evidence”), and *Hobbs v. United States Atomic Energy Commission*, 451 F.2d 849, 856 (5th Cir. 1971) (“[T]he presumption of patent validity may be rebutted only by a quantum of proof—whether it be called clear and convincing or beyond a reasonable doubt—which is greater than a mere preponderance.”). The Eighth Circuit followed a “substantial evidence” standard, but noted that “the proof which was considered adequate under the substantial evidence standard here would also suffice under the clear and convincing evidence test.” *Clark Equip. Co. v. Keller*, 570 F.2d 778, 795 n.17 (8th Cir. 1978).

squarely adopted a preponderance standard, and the court still required clear and convincing evidence where the prior art at issue was oral testimony of prior invention.²⁸ Despite the Sixth Circuit's adoption of the preponderance standard, the overlying message was that the patent system was "in distress,"²⁹ and that the presumption of validity was meaningless.³⁰

Soon after the creation of the Federal Circuit, the court adopted the clear and convincing standard³¹—hardly a watershed event, considering that the clear and convincing standard was already the majority rule. In addition, the Federal Circuit also addressed whether the presumption applied to prior art that the USPTO never had considered. The court held that the presumption still applied to such art, but that the patent challenger's burden was easier to discharge because the added burden of deference to the USPTO was absent.³² We might similarly suppose that this, too, was

28. See, e.g., *Dickstein v. Seventy Corp.*, 522 F.2d 1294, 1297 (6th Cir. 1975); see also *Saginaw Prod. Corp. v. E. Airlines, Inc.*, 615 F.2d 1136, 1240 (6th Cir. 1980) (utilizing the preponderance standard).

29. Abe Fortas, *The Patent System in Distress*, 53 J. PAT. & TRADEMARK OFF. SOC'Y 810 (1971).

30. According to former Justice Fortas:

Of course the law says that a properly issued patent is presumptively valid. But confronted by judicial hostility, this presumption is about as formidable as a silk screen against a machine gun. To many appellate judges, the presumption is something to acknowledge, and then to show that it's not controlling.

Id. at 810. To be sure, the fact that some courts were holding that the presumption of validity only applied to art that the USPTO had considered probably contributed to this message.

31. E.g., *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360 (Fed. Cir. 1984). Indeed, in doing so, the Federal Circuit rejected a beyond a reasonable doubt standard, presumably an inappropriate standard for civil patent cases in the modern understanding, but still a formulation that enjoyed considerable support in older patent cases. See *Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc.*, 750 F.2d 1552, 1560 (Fed. Cir. 1984) (discussing the issue and concluding that it was proper for the district court to instruct the jury that the clear and convincing standard applied to invalidity determinations).

32. According to Judge Rich in *American Hoist*:

When no prior art other than that which was considered by the USPTO examiner is relied on by the attacker, he has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job. . . . [¶] When an attacker, in sustaining the burden imposed by § 282, produces prior art or other evidence not considered in the USPTO, there is, however, *no reason to defer* to the USPTO so far as *its* effect on validity is concerned. . . . What the production of new prior art or other invalidating evidence not before the USPTO does is to eliminate, or at least reduce, the element

hardly a notable departure from pre-Federal Circuit law, because it seemed to leave courts free to act as they did prior to the establishment of the Federal Circuit: refusing to give the presumption of validity any real meaning in litigation involving newly-discovered prior art.

Yet the tone of the Federal Circuit's early opinions on the presumption of validity, in the context of other events then occurring in the patent system,³³ resulted in a very palpable change in the overlying message: the new message was that the Federal Circuit had "strengthened" the presumption of validity and had made it meaningful once again. The lesson here is important: there is no strict, inevitable correlation between the words of the evidentiary standard and the overlying message delivered by the presumption of validity. The message is independently significant for purposes of patent policy and, of course, for purposes of patent policy reform.

B. Modern Federal Circuit Cases

The Federal Circuit has never changed the words of the evidentiary standard for overcoming the presumption of patent validity. The court has instead repeated the standard in dozens, perhaps hundreds of opinions.³⁴ Yet it would be a mistake to assume that, because the words of the standard have remained constant throughout the Federal Circuit's tenure, the message of the presumption of validity has likewise remained constant or that there is a tight connection between the words of the standard and specific case outcomes.

of deference due the USPTO, thereby partially, if not wholly, *discharging* the attacker's burden, but neither shifting nor lightening it or changing the standard of proof.
725 U.S. at 1359 (emphasis original).

33. Events such as the consolidation of power in the new court, the character and track record of the judges on the new court, and the command that the new court "unify" patent law. For more on the before and after story on the presumption of validity, see Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 6, 18-21 (1989).

34. A few recent examples include: *Elan Corp., PLC v. Andrx Pharmaceuticals, Inc.*, 366 F.3d 1336, 1340 (Fed. Cir. 2004) ("Patents are presumed to be valid, 35 U.S.C. § 282 (2000), and an accused infringer challenging the validity of a patent under the on-sale bar must demonstrate by 'clear and convincing evidence"); *Golden Blount, Inc. v. Robert H. Peterson Co.*, 365 F.3d 1054, 1058 (Fed. Cir. 2004) ("To establish invalidity, the supporting facts must be shown by 'clear and convincing evidence.'"); *Norian Corp. v. Striker Corp.*, 363 F.3d 1321, 1326 (Fed. Cir. 2004) ("The jury was correctly instructed that a party seeking to invalidate a patent must do so by clear and convincing evidence.").

The Federal Circuit's cases contain isolated hints that the standard is reasonably fluid despite the court's *pro forma* deployment of it. For example, when it perceives a good case for invalidating claims, the Federal Circuit has been known to observe that "even under a 'clear and convincing' standard, proof need not be airtight."³⁵ The court has also held that the jury need not be instructed that the presumption of validity exists, so long as the jury is instructed that facts establishing invalidity must be tested by the clear and convincing standard.³⁶

The Federal Circuit's *Rochester* opinion illustrates the fluidity of the clear and convincing standard.³⁷ The claims concerned methods to inhibit the activity of the human COX-2 enzyme (implicated in arthritis) by administering a compound that "selectively inhibits activity of the [COX-2] gene product."³⁸ The patent disclosed the existence and function of COX-2, as well as a screening assay for determining whether a screened drug displayed the COX-2 selectivity.³⁹ However, the patent did not disclose any actual drug possessing the desired COX-2 selectivity, and the patentee (*Rochester*) acquiesced in the defendant's assertion that no actual drug existed as of the application filing date.⁴⁰ The defendant (*Searle*) challenged validity on written description grounds and prevailed on summary judgment before the district court.⁴¹ On appeal, *Rochester* argued that because *Searle* had not introduced any evidence in support of the written description theory, *Searle* could not as a matter of law overcome the presumption of validity.⁴² However, the Federal Circuit disagreed. According to the court, the presumption of validity does not foreclose the possibility that "the patent in suit proves its own validity" and *Rochester*'s patent "clearly and convincingly does just that."⁴³

Rochester reinforces the proposition developed in the preceding section: that the Federal Circuit is capable of changing the overlying message delivered by the presumption of validity without changing the language of the evidentiary standard. If it becomes *de rigueur* at the Federal Circuit to

35. *Buildex Inc. v. Kason Indus., Inc.*, 849 F.2d, 1461, 1464 (Fed. Cir. 1988) (overturning the district court's fact finding as to the existence of a pre-critical date offer as clearly erroneous and thus reversing the district court's legal conclusion that the patent was not invalid for violating the on-sale bar).

36. *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247 (Fed. Cir. 2004).

37. *University of Rochester v. G.D. Searle & Co.*, 358 F.3d 916 (Fed. Cir. 2004).

38. *Id.* at 918 (quoting U.S. Patent No. 6, 048,850 (issued Apr. 11, 2000)).

39. *Id.*

40. *Id.* at 930.

41. *Id.* at 919.

42. *Id.* at 930.

43. *Id.*

speak of patents clearly and convincingly proving their own invalidity, then, with the passage of time, the overlying message of the presumption of validity will change even if the language of the evidentiary standard remains constant.

By analogous reasoning, we should be wary of a reform proposal that seeks to effectuate changes in case outcomes simply by changing the language of the evidentiary standard. Such a proposal presumes a tight connection between the language of the standard and the outcomes of cases. That is, it fixates on the instrumental function of the presumption of validity to the apparent exclusion of the expressive function. In so doing, it exaggerates the extent to which changes to the language of the presumption can be used as a strategy for fine-tuning the patent systems.

C. Trademark Cases: Experience with the Preponderance Standard

Experience with trademark cases reinforces the point that the words of the evidentiary standard and the message associated with a presumption of validity may diverge such that case outcomes are very difficult to predict based merely on the choice of evidentiary standard. The current regime for adjudicating trademark validity resembles the FTC Report's proposed regime for adjudicating patent validity. The Lanham Act provides a presumption of validity for marks registered on the Principal Register,⁴⁴ and a number of courts have embraced the preponderance standard as the quantum of evidence required to overcome the presumption. Despite the existence of a statutory presumption of validity, many courts seem to have taken the message that the presumption in trademark cases is to be ignored altogether: in many decisions, the presumption either is not mentioned at all or is largely trivialized.⁴⁵ For example, in *Tie Tech, Inc. v. Kinedyne Corp.*, Tie Tech registered the product configuration trade dress of its hand-held welding cutter.⁴⁶ After a lengthy prosecution, including an ap-

44. 15 U.S.C. § 1115(a) (2000) (providing that a mark registered on the Principal Register "shall be prima facie evidence of the validity of the registered mark").

45. Courts have held that the presumption only shifts the burden of production to the trademark challenger. *E.g.*, *Liquid Controls Corp. v. Liquid Control Corp.*, 802 F.2d 934, 937 (7th Cir. 1986). Also, some courts have held that the presumptions are of the bursting bubble variety: where the trademark challenger has met the burden of producing rebuttal evidence, the presumptions disappear. *Igloo Products Corp. v. Brantex, Inc.*, 202 F.3d 814 (5th Cir. 2000); *Lane Capital Mgmt., Inc. v. Lane Capital Mgmt., Inc.*, 192 F.3d 337 (2d Cir. 1999); *Door Sys., Inc. v. Pro-Line Door Sys., Inc.*, 83 F.3d 169 (7th Cir. 1996). *But see* *Americana Trading, Inc. v. Russ Berrie & Co.*, 966 F.2d 1284 (9th Cir. 1992) (rare example of a case calling for a district court to give greater weight to the presumptive effect of registration).

46. 296 F.3d 778, 781 (9th Cir. 2002).

peal to the Trademark Trial and Appeal Board, the registration issued.⁴⁷ One of the principal issues in the prosecution was the functionality of the claimed trade dress.⁴⁸ Tie Tech subsequently sued Kinedyne for the trade dress infringement, but Kinedyne won on summary judgment on the ground that the registration was invalid for functionality.⁴⁹ On appeal, the Ninth Circuit acknowledged that “the plaintiff in an infringement action with a registered mark is given the prima facie or presumptive advantage on the issue of validity, thus shifting the burden of production to the defendant to prove otherwise.”⁵⁰ However, the court made clear that the effect of the presumption was negligible. According to the court, once the presumption of validity was overcome, “the mark’s registration is merely evidence ‘of registration,’ nothing more.”⁵¹ Thus, the Ninth Circuit rejected the proposition that the registration “should be treated as something of an expert’s affidavit on its validity.”⁵² Moreover, the court asked very little of the defendant in agreeing with the lower court that the defendant had overcome the presumption of validity. The defendant merely presented functionality allegations that likely were the same as those raised during the prosecution.⁵³ It is difficult to discern how the existence of the registration, and the corresponding presumption, made any material difference in the case.⁵⁴

In other decisions, the presumption and the associated preponderance standard is a matter of controversy. For example, in *Burke-Parsons-Bowlby Corp. v. Appalachian Log Homes, Inc.*,⁵⁵ the validity issue centered on whether the mark “APPALACHIAN LOG STRUCTURES” used in connection with the construction of log residences was primarily geo-

47. *Id.*

48. *Id.*

49. *Id.* at 781-82.

50. *Id.* at 783.

51. *Id.*

52. *Id.* at 784.

53. *See id.* at 783 (reciting the three aspects the defendant cited it believed to be functional).

54. Functionality provides a particularly good illustration. In cases involving unregistered trade dress, the Lanham Act expressly assigns to plaintiffs the burden of proving non-functionality. 15 U.S.C. § 1125(a)(3) (2000). Had *Tie Tech* involved unregistered trade dress, the plaintiff would have been required to produce evidence raising a fact issue as to functionality pursuant to discharging its burden of proof. In the actual case, the plaintiff was compelled to produce evidence raising a fact issue as to functionality pursuant to discharging its burden of coming forward with evidence in response to defendant’s allegations. *Tie Tech*, 296 F.3d at 784-86. In practical terms, it is difficult to distinguish between the two.

55. 871 F.2d 590 (6th Cir. 1989).

graphically descriptive, and, if so, whether the mark owner had demonstrated evidence of secondary meaning.⁵⁶ In the registration process, the trademark examiner requested evidence of secondary meaning, the applicant submitted evidence, and consequently, the examiner acceded to registration.⁵⁷ In subsequent litigation, the district court had invalidated the registration on the grounds that the mark was geographically descriptive and the evidence of secondary meaning was insufficient to overcome descriptiveness.⁵⁸ The Sixth Circuit upheld the district court, stating that while the USPTO's decisions were given deference, the presumption was rebuttable, and plaintiff's evidence of secondary meaning was insufficient.⁵⁹

However, the remaining judges disagreed as to the effect of the presumption. According to Judge Krupansky, in his concurring opinion, the presumption did not even shift the ultimate burden of proof from the trademark owner.⁶⁰ Instead, once the trademark challenger introduced evidence rebutting the presumption—which seemed to require little here—the ultimate burden of proof, including the heavy burden of proving secondary meaning, reverted to the trademark owner.⁶¹ In contrast, Judge Guy's dissent offered a dramatically different view of the effect of the presumption of validity. Judge Guy argued that a trademark challenger must submit “very persuasive” evidence to overcome the presumption.⁶² Quoting from an old Second Circuit decision,⁶³ Judge Guy asserted that the trademark challenger not only bears the burden of going forward to challenge validity, but also bears the burden of proof. The presumption of validity is “strong,” and courts should not “overrule the action of the Patent Office to whose care Congress has entrusted the preliminary determination as to whether a mark fulfills the requirements of the statute.”⁶⁴

In fairness, any confusion that might result from adopting a preponderance standard for patent validity would probably be less severe than

56. *Id.* at 592-93

57. *Id.* at 595.

58. *Id.* at 595-96.

59. *Id.* at 596.

60. *Id.* at 597 (Krupansky, J., concurring).

61. *Id.* (Krupansky, J., concurring).

62. *Id.* at 598 (Guy, J., dissenting).

63. *Id.* at 598-99 (Guy, J., dissenting) (quoting *Aluminum Fabricating Co. v. Season All-Window Corp.*, 259 F.2d 314, 316 (2d Cir. 1958)). Illustrating the malleability of the preponderance standard, the Second Circuit in *Aluminum* was evidently applying a preponderance of the evidence standard for overcoming this strong presumption of validity. The Second Circuit remarked that in order to prevail, the trademark challenger had to “put something more into the scales than the registrant” had put into the scales. *Aluminum*, 259 F.2d at 316.

64. *Burke-Parsons-Bowlby Corp.*, 871 F.2d at 598 (Guy, J., dissenting).

that existing in the trademark area. Unlike the Lanham Act provision, § 282 of the Patent Act expressly provides that “[t]he burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such validity.”⁶⁵ Nonetheless, the point remains that merely changing the language of the patent law standard to “preponderance” by no means ensures that courts will converge around a uniform approach to assessing patent validity evidence. Trademark law suggests that a change to a preponderance standard may simply inject ambiguity as to the governing message that the presumption of patent validity is intended to deliver. This would then open the door to a plurality of different approaches to implementing the presumption in individual cases.

D. Conclusions Regarding the Presumption’s Expressive Function

In targeting the presumption of validity for reform, perhaps the FTC Report chose unwisely. For the reasons detailed above, changing the words of the evidentiary standard might make little difference in case outcomes. At the same time, the overarching message that the presumption of validity sends is such a potent indicator of the overall state of the patent system that a proposal to alter it might provoke a visceral reaction within the patent community that may undercut the credibility of other aspects of the FTC patent reform agenda. Moreover, the proposal and the reaction is might engender may serve to polarize the debate, activating latent tensions between the antitrust and patent communities. It would be highly unfortunate if this proposal, and the reaction to it, diverts attention from other important proposals for patent reform appearing in the FTC’s Report, such as the proposal for post-grant revocation, as discussed in more detail in the following part.

IV. INSTRUMENTAL FUNCTION OF THE PRESUMPTION OF VALIDITY

While typical reform proposals, like those of the FTC Report, overlook the expressive quality of the presumption of validity, they do focus considerable attention on the instrumental function of the presumption (and its associated clear and convincing standard). The FTC Report’s instrumental arguments for changing to a preponderance standard are plausible, but not ironclad.

65. 35 U.S.C. § 282 (2000); *see also* *New England Braiding Co. v. A.W. Chesterton Co.*, 970 F.2d 878, 882 (Fed. Cir. 1992) (“The presumption acts as a procedural device which places the burden of going forward with evidence and the ultimate burden of persuasion of invalidity at trial on the alleged infringer.”).

The Report's principal arguments for reforming the presumption of validity are not expressly instrumentalist, but can be understood in instrumental terms. First, the FTC Report argues that the *ex parte* examination scheme has proven to be of only limited effectiveness in discriminating between patent-worthy and patent-unworthy inventions, so patentees should not enjoy the benefit of "a heightened evidentiary standard" against validity challenge in litigation.⁶⁶ That is, as between the patentee and patent challenger, the limitations of *ex parte* practice counsel against insulating the patentee to such a great extent from the risk of error. Instead, the patentee should bear a greater degree of risk of an erroneous judgment as to validity.⁶⁷

Second, the FTC Report asserts that the clear and convincing standard facilitates anticompetitive uses of patents because patentees are emboldened in the knowledge that it will be difficult for any challenger to rid the marketplace of a "bad" patent⁶⁸ and, of course, correspondingly difficult to make out a claim that the patent litigation was motivated by anticompetitive impulses.⁶⁹ The FTC's analysis is thoughtful and its arguments are plausible. However, its treatment of the presumption of validity is cursory and gives too little attention to at least two complicating factors: (1) the interconnections between validity and scope doctrines; and (2) the inter-

66. FTC REPORT, *supra* note 2, ch. 5, at 28.

67. One weakness of a purely instrumental account of the presumption of validity, at least as articulated in the referenced section of the FTC Report, is that it seems to encourage an undue focus on allocating risks between the private litigants without adequately addressing the risks (or benefits) running to third parties. Some third party effects support the FTC's proposal, but others do not.

A few simple examples suffice to make the point. Assume that litigation between a patentee and a patent challenger results in a correct judgment that a patent is invalid. That judgment has preclusive effect against the patentee. As a result, third parties enjoy the benefit of operating in the patent-free environment, but only the patent challenger bears the risk. Discarding the clear and convincing standard in favor of a preponderance standard might seem attractive in such circumstances insofar as it might facilitate the patent challenger in acting to rid the marketplace of an invalid patent, to the benefit of both the challenger and the public.

Similarly, assume that litigation results in an erroneous judgment upholding patent validity. The patent can be enforced against third parties and may *de facto* enjoy a "strengthened" presumption of validity. Discarding the clear and convincing standard again might appear attractive in such circumstances.

68. This argument is facially problematic because it seems to start from the premise that everyone can agree on which patents are in fact of "questionable validity," when resolving that issue is, of course, the very point of patent validity litigation.

69. For an explanation of the relevant law on allegations of anticompetitive patent litigation, see HERBERT HOVENKAMP ET AL., 1 IP AND ANTITRUST 11-1 to -38 (2001 & Supp. 2004).

connections between validity litigation and other mechanisms for resolving validity disputes.

A. Litigating Validity Versus Litigating Scope

While the FTC's arguments are plausible, they suffer from tunnel vision. Patent validity issues do not exist in isolation from other patent law doctrines.⁷⁰ It is a mistake to suggest changes to patent validity doctrines without accounting for the interconnections between validity and other doctrines, such as patent scope, especially in light of the fact that the law of patent scope has been particularly volatile in the past decade.

Consider the following possible consequence of adopting the FTC Report's proposal concerning the presumption of validity. Current conventional wisdom holds that the Federal Circuit is pursuing a policy which combines a relatively liberal approach to patent validity (meaning that patents are perceived as difficult to invalidate) with a relatively restrictive approach to patent scope (meaning that patent infringement is perceived as being easy to avoid, particularly infringement under the doctrine of equivalents).⁷¹ Such an approach may reflect a view about the appropriate balance between giving a fair reward to inventors and giving fair notice to the public. Suppose that the Federal Circuit were subjected to a legislatively-imposed change to the evidentiary standard for overcoming the presumption of validity.⁷² If a legislative change made it easier for challengers to invalidate patents, might the Federal Circuit react by restructuring its current restrictive approach to patent scope? For example, the court might apply the claim construction axiom that courts will construe claims

70. For a few examples consider the connections between validity and claim construction, validity and infringement generally, and validity and the limitations on equivalency. *See, e.g.*, *Smithkline Diagnostics, Inc. v. Helena Labs. Corp.*, 859 F.2d 878, 882 (Fed. Cir. 1988) (stating that claims are construed consistently for validity and infringement); *Lewmar Marine, Inc. v. Barient, Inc.*, 827 F.2d 744, 747 (Fed. Cir. 1987) (commenting on the symmetry between infringement and validity determinations); *Wilson Sporting Goods Co. v. David Geoffrey & Assoc.*, 904 F.2d 677, 685 (Fed. Cir. 1990) (holding that validity determinations are relevant to an infringement analysis that uses the hypothetical claim methodology); *see also Johnson & Johnston Assoc., Inc. v. R.E. Serv. Co.*, 285 F.3d 1046, 1063 (Fed. Cir. 2002) (Lourie, J., concurring) (discussing the interplay between foreseeability as an equivalency concept and obviousness).

71. For an acknowledgment of the conventional wisdom and citations to statistical studies that may support the conventional wisdom, *see*, for example, FTC REPORT, *supra* note 2, ch. 5, at 25.

72. I recognize that the clear and convincing standard is a judicial creation, and that reform proposals contemplate that the Federal Circuit could change to the preponderance standard without Congressional intervention. If the Federal Circuit cannot be persuaded to change the standard, then presumably reform proposals would advocate that the reforms be effectuated through legislative change.

so as to preserve their validity, rather than the currently popular counter-axiom that courts are not entitled to rewrite claims.⁷³ Additionally, the Federal Circuit might adjust the verbal formulation for equivalency⁷⁴ to make it easier for patentees to capture infringers under the doctrine of equivalents, or the court might relax the doctrine of prosecution history estoppel by displaying a greater willingness to find that patentees had overcome the *Festo* presumption.⁷⁵

This notion—that action on the presumption of validity might precipitate an equal and opposite reaction in other doctrines, yielding zero net momentum—need not be viewed as a prediction of Federal Circuit recalcitrance or general Federal Circuit peevishness. The Federal Circuit might legitimately take the view that it has struck the right balance between validity and infringement (between reward to the patentee and notice to the public), and that sound patent policy would demand a reconsideration of the law of claim scope in response to a change in the law of patent validity. Whether this particular prediction about the Newtonian dynamics of patent jurisprudence is accurate is largely beside the point. Policymakers should not assume that a change to the presumption of validity will only affect validity and will generate no compensating reaction elsewhere in the patent system.

B. The Presumption of Validity as a Channeling Mechanism

Just as patent validity doctrines do not exist in isolation from other patent doctrines, patent litigation as a mechanism for resolving patent validity disputes does not exist in isolation from other mechanisms for resolving patent validity disputes. Those mechanisms are many, including private action in the form of license negotiations or formal alternative dispute resolution and administrative action in the form of post-grant revocation schemes⁷⁶ or even *ex parte* examination. Proposals to reform the presumption of validity seem to focus on how the reforms might change parties' behavior in litigation, but seem to ignore the prospect that reforms

73. See *Phillips v. AWH Corp.*, 363 F.3d 1207, 1218 (Fed. Cir. 2004) (Dyk, J., dissenting in part) (discussing axiom and counter-axiom).

74. See *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 39-40 (1997) (delegating from the Supreme Court to the Federal Circuit authority to establish the precise verbal formulation for equivalency).

75. See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, (2002) (establishing the *Festo* presumption); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359 (Fed. Cir. 2003) (elaborating on the factors for rebutting the *Festo* presumption), *cert. denied*, 121 S. Ct. 2018 (2004).

76. For a description of such schemes and a detailed proposal to create such a scheme in U.S. law, see Mark D. Janis, *Rethinking Reexamination: Toward a Viable Administrative Revocation System for U.S. Law*, 11 HARV. J.L. & TECH. 1 (1997).

might change parties' incentives to resolve validity disputes through mechanisms other than litigation.

The most serious potential impact concerns post-grant administrative revocation. All other factors being equal, the FTC Report's recommendation concerning the presumption of validity might work at cross-purposes with the Report's very important recommendation to create a post-grant revocation system.⁷⁷ To the extent that the presumption of validity operates as a channeling mechanism, directing validity disputes towards or away from the courts, the proposal to discard the clear and convincing standard may encourage patent challengers to resolve validity disputes in court and correlatively discourage use of any newly-created administrative revocation scheme.

This result would be a serious step backwards. As compared to validity litigation, well-designed post-grant revocation schemes offer the promise of quicker, cheaper resolution of patent validity disputes.⁷⁸ While the Report argues that post-grant revocation is desirable because it reduces the private costs of *challenging* validity,⁷⁹ a more ambitious claim can be made: such a system might reduce overall private costs of *litigating* validity—meaning private costs incurred by both the challenger and the patentee—if such a system diverts validity disputes away from the courts, which are more expensive fora for both parties. If the facts bear this claim out, we should retain a robust presumption of validity, exactly the opposite of the FTC Report's proposal.

Unfortunately, we have little experience so far with the use of the presumption of validity as a channeling device between roughly equivalent, alternative fora for resolving validity disputes. For example, under current law, the clear and convincing standard applies in litigation but not in reexamination.⁸⁰ If all other factors were equal—if litigation and reexamination were roughly equivalent fora for resolving validity disputes—we would expect that this combination of evidentiary standards would channel patent challengers away from litigation and towards reexamination. This outcome has not occurred; from the patent challenger's perspective, even *inter partes* reexamination is not a rough substitute for litigation.⁸¹

77. For the FTC's recommendation concerning post-grant administrative revocation, see FTC REPORT, *supra* note 2, ch. 5, at 15-24.

78. *Id.* at 20. Of course, one should not underestimate the difficulty of designing a revocation system well.

79. *Id.*

80. For a discussion of relevant precedent, see Janis, *supra* note 76, at 63-69.

81. For a discussion of the reasons, see Mark D. Janis, *Inter Partes Reexamination*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 481 (2000).

The concept of the presumption and the evidentiary standard as channeling devices deserves more attention in policy debates over the instrumental function of the presumption of validity.⁸² In addition, the concept ties in with a larger scholarly debate over the appropriate allocation of responsibility among institutions of the patent system for deciding closely contested questions of patentability. In that larger debate, Professor Lemley has argued that the *ex parte* examination scheme is best designed to provide a quick look at patentability, so that we should push close questions of patentability forward to another system that is better suited to resolve contested issues.⁸³ The companion argument to Professor Lemley's view is that validity litigation is an expensive and cumbersome mechanism for resolving patent validity, so that we should push at least some close questions of patentability backwards to another system that is capable of resolving contested issues, even if that other system lacks all of the trappings of litigation. Both arguments highlight the importance of creating an intermediate space between the *ex parte* system and litigation, such as a post-grant revocation scheme, and of also creating procedural mechanisms that move disputes towards that intermediate space. A thoughtfully-designed presumption of validity is one such mechanism.

A key task for future patent policymakers is to arrive at a thoughtful design, one that achieves an optimal blend of *ex parte* examination, administrative revocation, and litigation for resolving validity disputes. There is currently no clear choice among many alternatives. I have suggested in this Article that the merits of the current clear and convincing standard as compared to the preponderance standard, but neither I nor anyone else would claim that the current standard has been an unalloyed success. Professor Rai has suggested that the clear and convincing standard might be restricted to patents that have survived post-grant revocation proceedings, but has acknowledged that this scheme might disadvantage truly pioneering inventions because such inventions might be so remote from the prior art that no one would see fit to bring a post-grant revocation.⁸⁴ Others have suggested that the Federal Circuit return to the rule that

82. The concept also has implications for another of the FTC Report's arguments, namely that the USPTO uses a preponderance standard in *ex parte* examination and thus, the courts should also use the same standard in validity litigation. FTC REPORT, *supra* note 2, ch. 5, at 28. This equivalency in standards is certainly not required, nor even necessarily desirable, if the presumption is being used deliberately to channel disputes either towards or away from the courts.

83. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1508-11 (2001).

84. See Arti Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035 (2003).

the clear and convincing standard applies only to litigation challenges that are based on prior art that the USPTO has already considered, but not as to challenges based on other prior art.⁸⁵

This proposal that the clear and convincing standard only apply to the considered prior art raises a number of questions. First, what does it mean for the USPTO to “consider” prior art? Does it mean that there is actual evidence that the examiner studied and applied the reference or does it merely mean that the examiner completed the ministerial steps necessary to allow the prior art to be listed on the front page of the patent? Second, would a return to this rule merely encourage parties to submit more voluminous information disclosure statements, adding to examiners’ workloads and decreasing the available time that an examiner can spend studying any given prior art reference? Third, despite Federal Circuit statements to the contrary, do courts today *de facto* withhold the clear and convincing standard when the challenger presents prior art that the USPTO has never considered?

My goal in this Article is not to select a clear winner from among these alternatives. Rather, my goal is to point out that the presumption of validity, even when viewed solely in instrumental terms, can play a significant role in mediating between alternative fora for resolving patent validity questions. Reform proposals concerning the presumption of validity should take this role more seriously.

V. CONCLUSION

Some eighty years ago, in *Radio Corp. v. Radio Engineering Laboratories, Inc.*, Justice Cardozo wrote perceptively about the presumption of patent validity.⁸⁶ Although his opinion preceded the codification of the

85. See, e.g., Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1660 (2003); Charles E. Phipps, *The Presumption of Administrative Correctness: The Proper Basis for the Clear and Convincing Evidence Standard*, 10 FED. CIR. B.J. 143 (2000). For another variation, see Clarence J. Fleming, *Should the Clear and Convincing Standard for Rebutting the Presumption of Validity Apply When the Challenger Raises a Substantial New Question of Patentability?*, 80 J. PAT. & TRADEMARK OFF. SOC’Y 146 (1998) (proposing a legislative change to § 282 that would specify that the preponderance standard applies when the challenger raises a substantial new question of patentability). The “substantial new question” standard appears in current reexamination provisions. 35 U.S.C. § 302 (2000). It has a dismal history, in which the USPTO has used the standard to find a substantial new question almost as a matter of routine. The standard has never proven capable of facilitating finely-calibrated judgments distinguishing between worthy and frivolous challenges to patentability and would likely result in the use of the preponderance standard in nearly all litigated cases.

86. 293 U.S. 1, 7-8 (1934) (internal citations omitted).

presumption of validity in the 1952 Act,⁸⁷ his words are still relevant today:

A patent regularly issued, and even more obviously a patent issued after a hearing of all the rival claimants, is presumed to be valid until the presumption has been overcome by convincing evidence of error. The force of that presumption has found varying expression in this and other courts. Sometimes it is said that in a suit for infringement, when the defense is a prior invention, "the burden of proof to make good this defense" is "upon the party setting it up," and "every reasonable doubt should be resolved against him." Again it is said that "the presumption of the validity of the patent is such that the defense of invention by another must be established by the clearest proof—perhaps beyond reasonable doubt." The context suggests that in these and like phrases the courts were not defining a standard in terms of scientific accuracy or literal precision, but were offering counsel and suggestion to guide the course of judgment. Through all the verbal variances, however, there runs this common core of thought and truth, that one otherwise an infringer who assails the validity of a patent fair upon its face bears a heavy burden of persuasion, and fails unless his evidence has more than a dubious preponderance.⁸⁸

In response to the FTC's proposal, I am dubious about the preponderance. The FTC has not made its case for altering the standards associated with the presumption of patent validity, either by a clear and convincing evidence standard or even by a preponderance. The presumption of patent validity is as much a malleable expression of ambitions as it is an instrument of precise calibration. Reform proposals should bear in mind the presumption's dual character as both expression and policy tool.

87. Patent Act, Pub. L. No. 82-593, 66 Stat. 729 (1952) (codified as amended in 35 U.S.C.)

88. *Radio Corp.*, 293 U.S. at 7-8.

INCENTIVES TO CHALLENGE AND DEFEND PATENTS: WHY LITIGATION WON'T RELIABLY FIX PATENT OFFICE ERRORS AND WHY ADMINISTRATIVE PATENT REVIEW MIGHT HELP

By Joseph Farrell[†] and Robert P. Merges[‡]

ABSTRACT

Given the limits on Patent Office scrutiny of patent applications, one might hope that *ex post* litigation can fix at least the important errors. Unfortunately, the often grossly skewed incentives to challenge and to defend issued patents make this view too optimistic. Since litigation cannot fix all errors, we urge better USPTO funding and higher standards of initial review, better incentives (not limited to formal duties) for applicants to find and disclose prior art information, and the creation of a cheap and workable administrative post-issue review. We explain why existing administrative reviews are not a workable system, and recommend some features that a new system should have.

TABLE OF CONTENTS

I.	PATENT OFFICE REVIEW ALONE IS INADEQUATE	944
II.	THE SYSTEM AS A WHOLE.....	946
III.	WILL LITIGATION FIX USPTO ERRORS?	946
IV.	INCENTIVES AND THE RELIABILITY OF LITIGATION	948
	A. Money Affects Legal Outcomes.....	948
	B. Skewed Incentives Affect Outcomes of Litigation.....	950
	C. The Public Good and Pass-Through Problems Create Skewed Incentives in Patent Litigation	951
	1. <i>The Public Good Problem</i>	952
	2. <i>The Pass-Through Problem</i>	953

© 2004 Joseph Farrell and Robert P. Merges

[†] Professor of Economics, University of California at Berkeley.

[‡] Wilson Sonsini Goodrich & Rosati Professor of Law and Technology, University of California at Berkeley (Boalt Hall), and Professor of Law, University of California Davis School of Law.

We thank Mark Lemley, Joseph Scott Miller, and Carl Shapiro for helpful comments. Further comments are solicited, so please e-mail farrell@econ.berkeley.edu and/or rmerges@law.berkeley.edu.

3.	<i>Incentive to Challenge in the First Place</i>	954
4.	<i>A Unified Analysis of Incentives to Litigate</i>	955
V.	POSSIBLE SOLUTIONS FOR INADEQUACY OF LITIGATION.....	960
A.	Improving USPTO examination.....	960
B.	Other Opposition Proceedings.....	964
1.	<i>“Old” Reexaminations Under the 1980 Act</i>	965
2.	<i>“New” Reexaminations: Going Backward</i>	967
3.	<i>Towards an Effective Post-Grant Revocation System</i>	967
VI.	CONCLUSION.....	968
	APPENDIX.....	969

I. PATENT OFFICE REVIEW ALONE IS INADEQUATE

The U.S. Patent and Trademark Office (USPTO) issues many patents that should not be enforced, either on economic or on legal grounds. Colorful examples of mistakenly, even ludicrously, issued patents are often cited. We have all heard about such “inventions” as the peanut butter sandwich and the toy on a stick.¹ As a result, many authors have explained how imperfectly the USPTO screens applications for novelty, utility, and nonobviousness. The standard litany of concerns about patent quality includes the following:²

- Inadequate resources for the USPTO to review each patent application, resulting in hasty examiner analysis of applications;
- Biased procedures that favor the patent applicant at every turn, permitting a strategy of “wearing down the examiner” to obtain a patent;

1. These examples are recounted in Shubha Ghosh & Jay Kesan, *What Do Patents Purchase? In Search of Optimal Ignorance in the Patent Office*, 40 HOUS. L. REV. 1219, 1220 (2004). The recent National Academy of Sciences study cited patents such as one for cutting or styling hair using scissors or combs in both hands, U.S. Patent No. 6,257,248 (issued July 10, 2001), and one for initiating forward motion on a child’s swing by pulling the ropes and swinging sideways, U.S. Patent No. 6,368,227 (issued Apr. 9, 2003). NAT’L ACAD. OF SCIS., *A PATENT SYSTEM FOR THE 21ST CENTURY* 39 (Stephen A. Merrill et al. eds., forthcoming 2004) [hereinafter NAS STUDY], available at <http://www.nap.edu/books/0309089107/html>. Many have criticized Amazon’s one-click patent. See, e.g., Evan Ratliff, *Patent Upending*, WIRED, June 2000, at 208, available at <http://www.wired.com/wired/archive/8.06/patents.html>.

2. For a recent comprehensive survey of these issues based on many statements by many participants in the patent process, see FED. TRADE COMM’N, *TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY* ch. 5, at 4-10 (2003) [hereinafter FTC REPORT], at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>. The National Research Council echoes the FTC Report’s concerns, and makes a similar call for increased USPTO expenditures to improve patent quality. See NAS STUDY, *supra* note 1, at 84-87.

- Skewed incentives that make it easier and more desirable for examiners to grant patents rather than reject them.

Despite widespread and persistent documentation of these points by patent lawyers, industry members, and academics, the USPTO and at least some independent observers doubt that patent quality is really a problem.³ Those arguments ring hollow, however. Indeed, given the rapid increase in the volume of patent applications in recent years and the relatively slow adaptation by the USPTO,⁴ it would be astounding if patent quality had *not* suffered. Recent evidence to this effect comes from an anonymous survey of patent examiners at the European Patent Office (EPO). Like the USPTO, the EPO has experienced massive growth in patent applications in recent years.⁵ As one would expect, the examiners polled stated overwhelmingly that they were concerned that the influx of new applications was seriously undermining the quality of the patents that the EPO issues.⁶

Of course, blatantly silly patents may be readily overturned if challenged, but presumably the blatant ones are only the tip of the iceberg. To the extent it is expected to be enforced, a patent enables a patentee to prevent others from using a technology or to charge them royalties for doing so. This limits commercial freedom. It deters, taxes, or worries other innovators, who are often uncertain about what might be patented, especially given the harsh penalties for willful infringement. Because it raises competitors' costs, a patent will normally increase prices to consumers. There is a good public policy reason for enforcing patent rights where a patent

3. USPTO, FY 2002 PERFORMANCE AND ACCOUNTABILITY REPORT 18 (2003), <http://www.uspto.gov/web/offices/com/annual/2002/1-58.pdf> (showing an official "error rate," based on internal quality assurance measures, of 4.2%); John R. Allison & Emerson H. Tiller, *The Business Method Patent Myth*, 18 BERKELEY TECH. L.J. 987 (2003) (arguing, on the basis of statistical proxies such as number of references, claims and inventors, that business method patents have not been of inferior quality since their inception). In addition to the fact that the USPTO's official error rate figures are generated by the same agency whose quality is under question, the figures result from a process that in many ways duplicates the original patent examination—same agency personnel, etcetera.

4. See USPTO, PERFORMANCE AND ACCOUNTABILITY REPORT FISCAL YEAR 2003 tbl.6, http://www.uspto.gov/web/offices/com/annual/2003/060406_table6.html (last modified Feb. 3, 2004) [hereinafter USPTO, PERFORMANCE AND ACCOUNTABILITY REPORT 2003].

5. EUROPEAN PATENT OFFICE, THE WORLD OF PATENTS: FACTS AND FIGURES 15 (2004), available at http://annual-report.european-patent-office.org/facts_figures/_pdf/facts_figures_04.pdf

6. Alison Abbott, *Pressured Staff 'Lose Faith' in Patent Quality*, 429 NATURE 493 (2004).

reflects a useful, novel, and nonobvious invention that would not have been made or disclosed without the spur of patent rights.

However, an improper patent is typically an unwarranted burden on consumers and on other innovation.⁷ A system that enforces a lot of improper patents would be a disgrace. While the legal standards for patentability do not fully reflect all of these economic tradeoffs, at least they bear some relation. As a result, in this Article, we discuss patent validity without stressing the question of what the validity criteria should be.

II. THE SYSTEM AS A WHOLE

We observed that it would be a disgrace for a system to enforce a lot of improper patents. This need not mean that it is bad if the USPTO issues a lot of invalid patents. Rather, the entire system of application, examination, issuance, negotiation, licensing, challenge, and enforcement should be evaluated as a whole.

Commentators have stated repeatedly that the optimal error rate at the USPTO is not zero, for at least two reasons. First, perfect screening would be immensely costly, so we might rationally tolerate a few bad patents.⁸ Second, mistakenly issued patents are not necessarily enforced: there are safety valves, notably litigation.⁹ This Article critically evaluates these safety valves. First, we discuss litigation and negotiation in its shadow. Then, we discuss administrative post-issue challenge and review.

III. WILL LITIGATION FIX USPTO ERRORS?

Litigation can invalidate bad patents issued by the USPTO. Patent invalidity is not only available as a defense in any infringement suit brought by a patentee, but patent invalidity may also be pleaded affirmatively since a patent challenger with a “reasonable apprehension” of an infringement

7. There are some possible arguments, sometimes called “ex post” efficiency arguments, for giving a patent quite aside from incentives to invent the patented material. See MARK A. LEMLEY, EX ANTE VERSUS EX POST JUSTIFICATIONS FOR INTELLECTUAL PROPERTY (U.C. Berkeley Public Law Research Paper No. 144, 2004), at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=494424. The weakness of those arguments can be hinted at by noting that they would argue for giving those patents to a random person.

8. See, e.g., Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1497 (2001); Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 593 (1999).

9. See, e.g., Lemley, *supra* note 8, at 1501-02; Merges, *supra* note 8, at 599.

suit may sue to have a patent declared invalid.¹⁰ In practice most of the economic consequences of patents stem from negotiation in the shadow of litigation. Thus, if bad patents can be reliably eliminated through litigation, and especially if this is predictable by informed private parties negotiating in litigation's shadow, then USPTO errors may not matter much.

Championing this line of reasoning, Professor Mark Lemley has argued that "rational ignorance at the Patent Office" may be part of a cost-efficient overall system: a quick-and-dirty review at the USPTO, followed in a few cases by a costly, intense, and reliable review in the courts.¹¹ Litigation can fix USPTO errors, Professor Lemley suggests, and since most patents are never asserted or licensed, it is cheaper to fix the few errors that would really matter than it would be to avoid errors in the first place:

[S]ociety ought to resign itself to the fact that bad patents will issue, and attempt to deal with the problem *ex post*, if the patent is asserted in litigation. This result is admittedly counterintuitive. It depends crucially on the fact that very few patents are ever the subject of litigation, or even licensing. Because of this, money spent improving the PTO examination procedures will largely be wasted on examining the ninety-five percent of patents that will either never be used, or will be used in circumstances that don't crucially rely on the determination of validity.¹²

We fully agree with Professor Lemley that the system should be evaluated as a whole, and that error rates at the USPTO should be assessed not in isolation but in light of the existence of other mechanisms, notably litigation, that might stop bad patents from having any real effects. Unfortunately, such an evaluation yields a much less reassuring answer than the one Professor Lemley puts forward. As we argue below, society cannot count on litigation to undo USPTO errors.

10. *See Vanguard Research, Inc. v. Peat, Inc.*, 304 F.3d 1249, 1254-55 (Fed. Cir. 2002); *see also* 28 U.S.C. § 2201 (2002) ("In a case of actual controversy within its jurisdiction . . . any court of the United States, upon the filing of an appropriate pleading, may declare the rights and other legal relations of any interested party seeking such declaration . . .").

11. Lemley, *supra* note 8, at 1497.

12. *Id.* at 1510-11.

IV. INCENTIVES AND THE RELIABILITY OF LITIGATION

Professor Lemley's analysis seems to assume that the outcome of litigation is empirically an accurate assessment of patent validity.¹³ The evidence does not favor this view. On the contrary, our analysis of incentives suggests that litigation is an unreliable tool for assessing patent validity.

Litigants choose to spend a lot of money, making litigation costly, because they believe that spending more improves their chances of winning. Skewed incentives (for example, if a patentee cares much more about winning than does an infringer) will on average yield skewed outcomes. In addition, the incentives often are drastically skewed because of the mutually reinforcing public good and pass-through problems.¹⁴

A. Money Affects Legal Outcomes

The average patent infringement case now costs roughly \$2 million for each party when there is \$1 million to \$25 million at risk.¹⁵ But the average conceals a much more informative fact, though not one that will surprise practitioners: the cost varies dramatically with the amount of money "at risk" in the litigation.¹⁶ The following graph gives a sense of the magnitudes involved:¹⁷

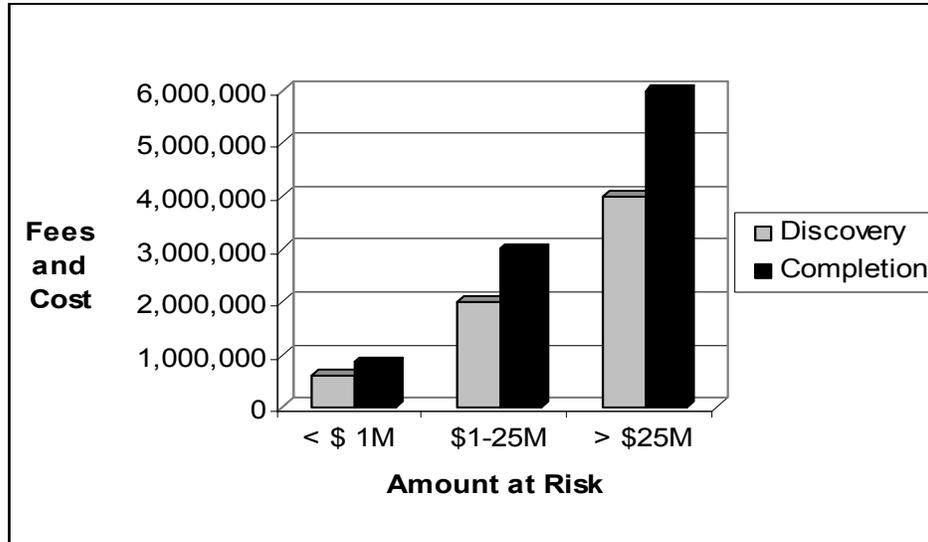
13. We talk here about the truth of whether a patent is valid as conceptually distinct from whether it will be found to be valid. Legal realists might press us on the meaning of this. Its meaning is that a full and balanced inquiry would reach a different conclusion than the somewhat-full but very unbalanced inquiry that arises from litigation with asymmetric stakes.

14. This will be further discussed in Part IV.C *infra*.

15. AM. INTELLECTUAL PROP. LAW ASS'N, REPORT OF THE ECONOMIC SURVEY 22 (2003).

16. Generally, this is the expected loss that will flow from an injunction and/or damages. It also varies according to how far the litigation proceeds, e.g., whether only to the discovery phase or all the way to a full trial.

17. William J. Robinson, Amount at Risk Versus Fees and Cost (charting data from AM. INTELLECTUAL PROP. LAW ASS'N, *supra* note 15, at 22).



This data imply that any irreducible expenses of patent litigation are less (probably much less) than \$1 million. In other words, conservatively more than half—probably the vast bulk—of average patent litigation costs, even in the lowest-stakes category, are discretionary. Bare-bones litigation would cost much less, but participants in high-stakes cases choose to spend much more.

That fact strongly indicates that, by spending more, a party can increase its chance of winning. If the plaintiff's chance of winning did not depend on its expenditures, plaintiffs would not spend so much, and the same is true for defendants. Litigation provides many opportunities to spend more in ways that increase one's chance of winning, and the higher the stakes, the more of those spending opportunities will be worthwhile. For instance, one can interview more potential witnesses; retain more (and more distinguished) experts (including multiple consultants as well as potential testifying witnesses); try out more alternative strategies before a mock jury; learn more about predicting jurors' sympathies so as to take better advantage of jury selection opportunities; prepare glitzier exhibits; chase down more case law; assign more associates; and hire advocates with tongues of gold rather than of silver. In patent dispute litigation, one can review more sources for prior art. Any lawyer can think of plenty more examples.

B. Skewed Incentives Affect Outcomes of Litigation

It follows, as has been recognized elsewhere, that skewed incentives will probabilistically affect litigation outcomes.¹⁸ Since a party's probability of prevailing increases with how much it spends, and its expenditures depend on its incentive to win, this makes it highly problematic to rely on litigation where party *A*'s stake is far bigger than *B*'s. Whatever the true relative merits, party *A* will pull out all the stops and present its case in full glory; party *B* will have an incentive to cut corners, make some compromises, and present its case within a more limited budget.

One empirical hurdle for our theory, and for others' theories that skewed incentives matter, is an imbalance of expenditures. If, despite asymmetric incentives, parties actually spend roughly equal amounts developing their cases, then there would be no reason to expect biased outcomes.¹⁹ However, this logical possibility would imply that while expenditures strongly respond to stakes when we compare cases with different stakes, as illustrated above, they do not respond to stakes when we compare parties in a case; we thus think it quite unlikely. Unfortunately, the data described above do not let us test this, and we are not aware of any data that would.

We do not claim that any particular court decided any particular patent challenge wrongly. Nor can our claims be tested in a particular case by reassessment of the evidence actually presented in court. If courts sensibly evaluate the evidence actually presented, the party with stronger incentives to search out and present the most favorable evidence will be apt to win

18. See, e.g., Keith N. Hylton, *An Asymmetric-Information Model of Litigation*, 22 INT'L REV. L. & ECON. 153, 166 (2002) (summarizing earlier literature concluding that "if defendants have more at stake than plaintiffs, they will spend more on litigation"). Much of this discussion has come in the context of studies describing which legal disputes go to trial and which legal disputes settle. Empirical evidence in this vein is consistent with the notion that litigation expenditures can influence trial outcomes.

The different stakes theory may explain low [plaintiff] success in employment discrimination cases. A successful action alleging a pattern or practice of employer misbehavior may spur related actions against the employer. An employer who loses even one discrimination claim is more vulnerable to future discrimination claims. Rational defendants would vigorously defend employment discrimination cases and settle weak cases for the defense before trial.

Theodore Eisenberg, *Litigation Models and Trial Outcomes in Civil Rights and Prisoner Cases*, 77 GEO. L.J. 1567, 1582 (1989).

19. Economic logic suggests that it is possible, but unlikely, that expenditures would tend to be equal even when incentives are skewed. It would require that the probability of prevailing be heavily dependent on expenditures up to the level of the opponent's expenditures, but unresponsive beyond there. There seems no reason to expect such a pattern.

even when that party is objectively in the wrong. Thus, reexamination of the evidence presented will not be a good way to find such errors or to argue for their absence. If indeed expenditures are asymmetric, one could in principle test our claim by taking a sample of litigated cases, rebuilding the parties' cases with equal budgets, and retrying the cases on that basis. We reiterate, however, that if the results were not affected, it would imply that litigants systematically waste money by making voluntary expenditures that do not help win their cases.

One possible solution calls on courts to take a sophisticated Bayesian approach to the evidence presented. Accordingly, when *A* has a much stronger incentive to win than *B*, the court would discount *A*'s case relative to *B*'s. The court should recognize that when the true underlying merits are balanced, it can expect *A* to present a significantly better case than *B*. Thus, if *A*'s case as presented is only moderately better than *B*'s, the court should find for *B*. If *A* had an objectively strong case, its stronger incentives imply that it could and would have presented a much stronger showing.²⁰ However, calibrating the appropriate standard of proof would require the court to know a great deal about how parties believe the court will respond to additional favorable evidence and about the likely costs of bringing forward such evidence.²¹

To make the proper adjustment, the court would need to know (1) the overall cost of upholding patents that ought to be invalidated; (2) the cost of invalidating patents that ought to be held valid, which implicates incentives for later inventors; (3) the stakes for each party; and (4) how expenditures affect success rates. All this would be extremely hard to know.

C. The Public Good and Pass-Through Problems Create Skewed Incentives in Patent Litigation

In many cases where each party's respective incentive is expressed by the difference in its profits between winning and losing, a patentee's incentive to defend its patent grossly exceeds an alleged infringer's incentive to challenge it. It is central to understand this point, which contrasts starkly with the simple case of a purely private dispute over, for example,

20. Strictly, this is only part of the correct standard-of-proof analysis, which should also take into account the consequences of false positives and false negatives.

21. One problem at the outset is getting fact-finders to focus on the standard of proof. Another is applying the standard with rigor and consistency. Note that asymmetric stakes explains why patentee win rates exceed 50%, the estimated win rate based on assumptions of equal information and equal stakes between the parties. See Kimberly A. Moore, *Judges, Juries and Patent Cases: An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 385 (2000) (demonstrating that patentees won 58% of cases in a statistical sample).

a sum of money, with no impact on third parties. In such cases, the stakes are the same for each party.

There are at least two reasons for this asymmetry of stakes in cases where multiple infringers compete with one another (and perhaps with the patentee) in one or more product markets. The first is the public good problem while the second is the pass-through problem.

1. *The Public Good Problem*

First, the *Blonder-Tongue* decision makes successful challenge a “public good” among multiple infringers.²² Professor Joseph Scott Miller asserts,

The Court viewed *Blonder-Tongue* as another step in the line of cases designed to “encourage authoritative testing of patent validity.” It was mistaken. *Blonder-Tongue*, considered alone, eliminates a patent attacker’s ability to exclude others from appropriating the benefit of its successful patent attack. It thus turns patent invalidity judgments into public goods. And the resulting free rider problem, which discourages patent challenges, is at least as stark as the one that justifies providing a patent system in the first place.²³

Thus, for instance, if there are five infringers of equal size, each gets only a fifth of the gains from a successful challenge because each is paying only a fifth of the patentee’s total royalties. Therefore, the patentee has five times more incentive to prevail in litigation than any one challenger has. Professor Miller and others have noted this problem and suggested policies to address it such as permitting infringers who compete with one another to coordinate a legal challenge to a patent,²⁴ offering a bounty to a successful challenger,²⁵ and relying on fee-shifting.²⁶

22. *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 350 (1971) (holding that if one challenger prevails on patent invalidity, the result applies to all).

23. Joseph Scott Miller, *Building a Better Bounty: Litigation-Stage Rewards for Defeating Patents*, 19 BERKELEY TECH. L.J. 667, 687-88 (2004) (quoting *Blonder-Tongue*, 402 U.S. at 344).

24. Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. (forthcoming 2005) (manuscript at 17, on file with authors), available at <http://faculty.haas.berkeley.edu/shapiro/patents.pdf>.

25. For a description of how such a system would work, see John R. Thomas, *Collusion and Cooperation in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305, 340-52 (2001). See also Miller, *supra* note 23, at 704-30 (proposing an improved litigation-stage bounty that would adequately reward the one who defeats a patent in litigation). But it would be very difficult to calibrate the bounty properly, giving enough incentive to challenge a patent but not so much as to create an industry of over-

2. *The Pass-Through Problem*

Second, when multiple infringers compete in a product market, royalties are often passed through, at least in part, to consumers downstream. The key point here is not that downstream consumers pay more, as they would even when an infringer is a monopolist in its product market, but that the competing infringers are substantially immunized from bearing the economic cost of the royalties, unlike a monopolist.²⁷

This pass-through will be stronger the more competitive the product market, the more symmetric the royalties, the more elastic the industry supply curve, and the less elastic the industry demand curve.²⁸ When pass-through is relatively strong, this effect may be bigger than and reinforcing of the public good problem. In the Appendix, we describe an economic model quantifying this effect and show that in a symmetric Cournot oligopoly the pass-through problem, at least for small royalties, is always bigger than the public good problem.²⁹ For instance, if five equal-sized

zealous bounty hunters. It is not even entirely clear whether the bounty should aim to reflect the losses (from enforcement of an invalid patent) to everyone except the patent holder and the challenger, or to reflect the ex post deadweight losses from its enforcement, which are likely to be far less. In addition, large patent owners would likely fight very hard to prevent such a system from coming into effect, making it unlikely that such a reform would actually be adopted.

26. See Jay P. Kesan, *Toward a Better Informed Patent System* 9 (Apr. 10, 2002), at <http://www.ftc.gov/opp/intellect/020410jaypkesan.pdf> (visited Aug. 7, 2004) (“One-way, pro-defendant fee shifting if patents revoked or invalidated based on prior art categories that could have been reasonably discovered by the patentee.”). Lemley also states:

[A]ccused infringers normally won’t get attorney’s fees unless they can prove that the suit was filed in bad faith. It may make sense to add some balance to the fee awards [as in copyright law] . . . and therefore help shift some of the burden of determining validity away from accused infringers.

Lemley, *supra* note 8, at 1530-31.

27. See generally Joseph Farrell, *Listening to Interested Parties in Antitrust Investigations: Competitors, Customers, Complementors and Relativity*, ANTITRUST, Spring 2004, at 64.

28. In the case of a perfectly competitive industry, the pass-through is related to the ratio of the elasticities of supply and demand. See, e.g., MICHAEL L. KATZ & HARVEY S. ROSEN, MICROECONOMICS ch.11 (3d ed. 1998).

29. See also Farrell, *supra* note 27, at 66 (stressing the role of pass-through in determining incentives to comment on potentially anticompetitive mergers or practices); Sheldon Kimmel, *Effects of Cost Changes on Oligopolists’ Profits*, 40 J. INDUS. ECON. 441, 444 (1992) (showing that pass-through can perversely make some, or even all, competing oligopolists better off if they all are charged more for an input such as technology). But see Richard Gilbert, *Antitrust for Patent Pools: A Century of Policy Evolution*, 2004 STAN. L. & TECH. REV. 3, ¶¶ 106-17, at http://stlr.stanford.edu/STLR/Articles/04_STLR

infringers compete Cournot-style in a \$1 billion product market with demand elasticity equal to -2 (that is, a 1% increase in market price causes a 2% fall in demand), and the patentee demands a uniform 5% royalty, each infringer has not one fifth but roughly one fortieth (\$1.2 million) as much at stake as has the patentee (\$50 million). The five infringers collectively have only \$6 million at stake, or about an eighth of the patentee's stake: the rest of the patentee's gains from upholding the patent come from downstream buyers.³⁰ Thus, even ideal collective action by direct buyer-licensees leaves the bulk of the incentive imbalance untouched. In this illustrative example, the public good issue causes a factor of five imbalance, potentially neutralized by ideal collective action among them. The pass-through effect causes a factor of eight, which collective action among direct buyers cannot help in the least.

Because downstream customers bear much of the harm from an invalid patent, they should have standing to sue for invalidity.³¹ Incentives would often still be diffuse, but our point is that, contrary to intuition, there is no economic reason to expect direct infringers to have appropriate incentives to challenge a patent even if they act collectively.

3. *Incentive to Challenge in the First Place*

The discussion above concerns an infringer's incentives to win a challenge versus quietly pay royalties as its rivals are doing. But losing a challenge can be a very different outcome from uncomplainingly paying non-discriminatory royalties. Challengers often find themselves subject to injunctions or less favorable licensing terms.³² Patentees can also charge dif-

[_3/index.htm](#) (discussing low incentive to challenge blocking patents where all must be invalidated for challenger to compete).

30. Direct infringers and downstream buyers pay somewhat more than the \$50 million that this remark would suggest, because the \$50 million is essentially a tax that has a deadweight loss. But the summary in the text is a good approximation.

31. In practice, the right to challenge the patent in litigation depends on either the patentee suing the downstream customer (which is relatively unusual but not unheard of), or threatening to sue to such an extent that the accused infringer has standing to file a declaratory judgment suit against the patentee. *See, e.g., Vanguard Research, Inc. v. Peat, Inc.*, 304 F.3d 1249, 1254-55 (Fed. Cir. 2002) (discussing standing requirement for declaratory judgment plaintiffs).

32. *See, e.g., Philips Licenses Hyatt's Microcomputer Patents*, PATENT WORLD, Dec. 1991/Jan. 1992, at 15 (describing a licensing agreement whereby Philips settled early with nonmanufacturing plaintiff seeking royalties from several industries for broad patents on liquid crystal displays and microprocessor; settlement was reported as favorable, and licensee Philips agreed to assist plaintiff Hyatt in extracting royalties from other firms in the industry). *See generally* Michael J. Meurer, *Controlling Opportunistic and Anti-Competitive Intellectual Property Litigation*, 44 B.C. L. REV. 509 (2003).

ferential royalties in a way that penalizes holdout firms who do not settle early.³³ This hardball behavior by the patentee strengthens the infringer's incentive to win if it brings a challenge, but further weakens the infringer's incentive to challenge in the first place rather than quietly pay up. On the other hand, softball behavior by the patentee (treating unsuccessful challengers just like any other infringers) encourages infringers to bring a challenge but saps their incentive to prosecute with vigor. Thus, although the analysis differs as between hardball and softball patentees, in neither case does a potential infringer have a strong incentive to mount a strong challenge.

4. *A Unified Analysis of Incentives to Litigate*

There are three relevant outcomes for the (alleged) infringer. He can take a license, as do his competitors, and pay for the running royalty demanded by the patentee³⁴ or he can refuse to take a license and expect to be sued for infringement, raising validity and/or infringement issues as a defense at that point. The infringer may also file suit himself if the patentee threatens enough to trigger "declaratory judgment" standing.³⁵ If he chooses to litigate, he must then choose how much to spend, and may win or lose in litigation.

Consider the profit levels of these three final outcomes relative to shutting down the allegedly infringing activity. Relative to shutting down, producing with a license may be profitable even in a competitive market, if participation requires substantial sunk costs. That is, even a free-entry

33. As discussed in the Appendix, even when licensees do not compete with one another, a patentee whose profit-maximizing royalty is, say, 5% to all, may without sacrificing much profit, license at 4% to tame licensees and 6% to those who insist on behaving in a feisty manner. When licensees compete with one another, the patentee may even refuse to deal with the latter without sacrificing much profit, because the subsequent increase in business to the tame licensees will substitute for the revenues sacrificed by the other licensee's refusal to deal. Differential royalty rates do not by themselves raise antitrust problems for a licensor. *See* *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505 (7th Cir. 1982). Nor does a refusal to deal. *See In re Indep. Serv. Orgs. Antitrust Litig.* (CSU, L.L.C. v. Xerox Corp.), 203 F.3d 1322, 1327 (Fed. Cir. 2000) ("In the absence of any indication of illegal tying, fraud in the Patent and Trademark Office or sham litigation, the patent holder may enforce the statutory right to exclude others from making, using, or selling the claimed invention free from liability under the antitrust laws.").

34. We assume here that the license takes this form, which is common in practice. If a patent were known to be valid, and if all other relevant market factors were known, lump-sum licensing would tend to be more profitable and more economically efficient. But our analysis illustrates an important strategic advantage of running royalties: they sap direct infringers' incentives to challenge.

35. *See, e.g., Vanguard*, 304 F.3d at 1254-55.

competitive market may involve significant quasi-rents once those costs have been sunk. Thus, write the infringer's profits following successful challenge as U , and its profits from taking a license as $V(r)$. The difference $U - V(r)$ is presumably positive, but may be smaller than one might have thought, both because of the public good problem among infringers and because running royalties under nondiscriminatory licenses may be largely passed through to downstream buyers.³⁶ In particular, as the Appendix shows, $U - V(r)$ is apt to be much smaller than S , the value to the patentee of preserving its patent from successful challenge.

Litigating and losing may be much worse for the infringer than paying the royalty. In some cases a permanent injunction would force it to shut down. Even short of that, a license at higher royalties than are offered to its less feisty rivals will substantially lower profits because the increment of royalties cannot be passed on in the same way.³⁷ Thus, the payoff from losing in litigation, W , may be far below $V(r)$, if the patentee is a hardball type. On the other hand, a softball patentee might be expected to continue to offer nondiscriminatory licenses, so that, aside from direct costs of litigation, W would roughly equal $V(r)$.³⁸

If litigation were to take place, the infringer's stake in winning is $U - W$. With a softball patentee, this is small, so the infringer's stake is well below, and often far below, the patentee's stake in litigation, S . To the extent that outcomes of litigation respond to relative stakes, this asymmetry of stakes makes the litigation highly asymmetric, and the patentee will be much more likely to win than the underlying merits warrant. If p represents the infringer's probability of winning, as a function of the two parties' stakes in litigation, $p(U - W, S)$ is below analogous probabilities such as $p(S, S)$ that would arguably measure true merits, in the case of a softball patentee because $U - W \ll S$.

36. Sheldon Kimmel, *supra* note 29, has shown that the pass-through effect can counter-intuitively make $U < V(r)$ even in non-pathological cases. Although this strengthens our argument, we do not pursue it here.

37. One must be careful about the meaning of pass-through. In a commodity industry such an increment will not be passed through unless the firm in question is the marginal producer. When there is product differentiation, an increase in this firm's marginal cost will normally affect its price (and probably its rivals' prices to a lesser degree), but here the relevant point is that the firm's profits fall by a large fraction of the increment in royalties, in contrast to the profit effect of uniform royalties among competitors.

38. If r is limited by the potential for challenge, it may well be that (if contracts allow) r will increase following an unsuccessful challenge. By the same logic as in the text, however, as long as such an increase is nondiscriminatory as between the challenger and other licensees, it will have relatively little impact on each licensee's profit. We do not pursue this here.

With a hardball patentee, on the other hand, $U - W$ is large. Thus, if settlement is not on the table, the infringer has an incentive to litigate vigorously. Although nothing tells us that $U - W$ is close to S , one would at least expect $p(U - W, S)$ to be closer to representing the true merits of the case than with a softball patentee.³⁹

Finally, working backward in this decision tree, consider the choice of whether to take a license. Taking a license gives a payoff of $V(r)$. Not doing so leads to litigation costs of $L(U - W, S)$ and then to an uncertain further payoff that is equal to U with probability $p(U - W, S)$ and to W with probability $1 - p(U - W, S)$. A little algebra shows that the expected payoff from not taking a license can be written as:

$$-L(U - W, S) + W + (U - W)p(U - W, S).$$

The infringer will therefore rationally take a license provided that $V(r)$ exceeds this quantity, or equivalently if and only if:

$$(U - W)p(U - W, S) \leq V(r) - W + L(U - W, S).$$

This condition is likely to hold even if r , the royalty demanded, is quite high relative to the underlying merits of the disputable patent. The reasons differ somewhat as between a softball and a hardball patentee.

Facing a softball patentee, recall that U , $V(r)$, and W are all relatively close to one another, and hence $p = p(U - W, S)$ may be small even if the patent is in fact quite dubious: if it comes to litigation, the infringer has little at stake while the patentee cares a great deal about the outcome. Moreover, if litigation costs decline less than proportionately with the stakes, then L will dominate the comparison. Thus, the infringer may well be reluctant to challenge for a mixture of those reasons, and any challenge will tend to be unrepresentatively feeble.

Facing a hardball patentee, recall that U and $V(r)$ are apt to be fairly close and W to be much lower. As a result, p will be reasonably large if the patent is in fact dubious, because the infringer's stakes (like the patentee's) in litigation are high. But the threat of W can intimidate infringers into paying royalties.

Even if L were zero, the infringer would take a license as long as $p \leq [V(r) - W]/[U - W] = 1 - [U - V(r)]/[U - W]$, which is close to 1 when $V(r)$ is much closer to U than is W . For instance, if $U = \$10$ million, $W = 0$ (an unsuccessful challenge will force shut-down), and $V(r) = \$9$ million, then a rational firm will take a license unless $p \geq 0.9$. Because of pass-

39. It is unclear to us at this time whether or not $U - W$ can exceed S .

through, r can capture well over a tenth of industry profits while still leaving the relationship between U and $V(r)$ as described.

Because any litigation would have high stakes on both sides, L is not apt to be small. If $L(U - W, S) > U - V(r)$, no challenge will take place even if the challenger is *guaranteed* to win ($p = 1$). Again, because of pass-through, $U - V(r)$ may be much smaller than the infringer's royalty payments, enabling the patentee to collect much more than L from each infringer even if the patent is certainly invalid. One could equivalently describe the problem by saying that a challenger bears the cost of litigation but its rivals and downstream buyers will capture almost all the benefits of successful challenge, so litigation costs can support royalty payments on an extremely weak patent well in excess of the prospective litigation costs. Therefore, although for somewhat different reasons, the chance of a successful challenge is low whether the patentee is softball or hardball. For modest values of r , no challenge will be rational for an individual infringer.⁴⁰

To be sure, it need not be inefficient for a questionable, as distinct from an evidently absurd, patent to generate some royalties without litigation. The level of royalties, however, should be commensurate with the value of the questionably patented technology and with the probability that the patent would be upheld in a full and fair investigation. Specifically, suppose that if the patent were certainly valid then all would be prepared to pay royalties of r^* , and that the probability of its being upheld in a well argued symmetric trial is $q = 1 - p(S, S)$. A reasonable outcome would be that negotiation in the shadow of litigation would enable the patentee to collect royalties of up to qr^* . In other words, that the threshold value of r above which a challenge would ensue should be in the range of qr^* . In that way the patentee would collect the expected value of its patent, while no litigation costs would actually be incurred.

The threshold value t is given by

$$(U - W)p(U - W, S) = V(t) - W + L(U - W, S),$$

or equivalently

$$U - V(t) = [U - W][1 - p(U - W, S)] + L(U - W, S).$$

40. Our analysis assumes that the infringer's competitors take a license. This calculation amounts to checking whether there is an equilibrium in which no infringer challenges. The condition for such an equilibrium is that none would choose to challenge if all others take a license. When victory by any challenger applies to the whole industry, as in *Blonder-Tongue*, there is no equilibrium in which more than one infringer seriously challenges. Thus, there is no challenge.

In the case of a hardball patentee, $U - W$ may approximate xr^* , where x is the infringer's output. For reasonably small values of t , we can use the linear approximation $U - V(t) = kxt$ for some constant k that is, because of pass-through, well below 1. The Appendix shows that in a symmetric Cournot (capacity-setting) oligopoly, when r is small, $k = (e - 1)/(ne - 1)$, where e is the absolute value of demand elasticity (the percentage by which demand would fall as a result of a 1% price increase) and n is the number of firms. For instance, if $e = 1.5$ and $n = 6$ then $k = [1/16]$. The Appendix also describes a five-firm example with a 5% royalty in which k is roughly an eighth. Then we have:

$$kxt = [1 - p(U - W, S)]xr^* + L(U - W, S),$$

so that

$$t = [1 - p(U - W, S)][r^*/k] + L/[kx].$$

This value of t exceeds the benchmark of qr^* for three reasons. First, $1 - p$ is likely to exceed q . Even though an infringer facing a hardball patentee has relatively strong litigation incentives, the public good problem still applies, so $U - W$ seems likely to be less than S . Second, even if $1 - p = q$, the first term in the expression for t is also inflated by a factor of $[1/k]$. Third, litigation costs per unit of output are also inflated by a factor of k even relative to the normal (not optimal) benchmark in which litigation costs will allow a degree of hold-up. As illustrated above and in the appendix, $[1/k]$ can easily be well over five, so these effects can be big.

Now consider a softball patentee. In the rather extreme case that we consider under that name, litigation costs L are the only downside of a patent challenge. Thus we have:

$$p(U - V(r), S)kxt = L(U - V(r), S),$$

so

$$xt = L/[pk].$$

This is not easily related to the benchmark of $t = qr^*$, but we can compare it to the case of purely private litigation, in which each party has the same amount, Y , at stake. There, a demand will be challenged if $Y > L/[1 - q]$. Thus t can be elevated for two reasons. First, $p < 1 - q$ because of weak incentives in litigation against a softball patentee, as discussed above. Second, the level of t that will call forth a challenge is inflated by the factor $[1/k] > 1$, relative to the private-litigation benchmark. As foreshadowed earlier, a patentee can demand royalties r up to a threshold level t that is

high compared to a natural normative benchmark qr^* for a hardball patentee, and high compared to the ordinary private-litigation benchmark of $L/[(1 - q)x]$ for a softball patentee.

V. POSSIBLE SOLUTIONS FOR INADEQUACY OF LITIGATION

If litigation is often biased (at least for softball patentees) and unappealing (at least for hardball patentees) and hence an unreliable *ex post* fix, what policy conclusions follow? It would make sense to improve USPTO examination, supplement litigation with other *ex post* reexamination mechanisms, or (most likely) both. We examine these in turn.

A. Improving USPTO examination

USPTO examination could be improved in various straightforward ways, but at a cost. Patent examiners could be given more time and more balanced incentives. The USPTO could regularly, rather than exceptionally, have more than one examiner assess an application, and could investigate further when examiners disagree.

Another way to get more information into the process would draw more fully on the applicant's information.⁴¹ The applicant has a duty of equitable conduct, arising from the recognition that the applicant has a great deal of information that bears on validity.⁴² But current enforcement of that duty falls short of taking full advantage of that source. We recommend moving beyond today's exclusive narrow focus on probably bad behavior, and considering policies that pay broader attention to an applicant's incentives to search and to disclose.

With the growing complexity of technology and the consequent burdens on the USPTO, the courts and the USPTO itself began to formulate rules requiring truthful disclosures by a patent applicant. These rules reflected the understanding that the inventor him or herself is initially the best source of information not only about the invention sought to be patented, but also about the prior art. As one court put it,

Because patent applications are prosecuted *ex parte*, almost always concern complicated matters of technology, and often come on the heels of lengthy preliminary investigation, appli-

41. This is the foundation for the Federal Trade Commission's recommendation that patent applicants be required to submit a statement of relevancy with all prior art disclosures during patent prosecution, upon the request of the examiner. *See* FTC REPORT, *supra* note 2, ch. 5, at 12-13.

42. *Id.* at 7-8.

cants are under a strict duty to reveal to the PTO all facts material to their applications. . . . In order to set up a disincentive for shirking this duty to disclose, courts have permitted defendants to assert, as defense to a claim of patent infringement, that the patent in suit is unenforceable by reason of the applicant's "inequitable conduct" in dealings with the PTO.⁴³

But applicant disclosure rules have been a notorious sore spot in the patent system for some time. The Federal Circuit and the USPTO have each struggled over how to structure such disclosure rules.⁴⁴ We see two problems with the current system. First, disclosure is treated as a matter of enforcing a duty rather than as designing incentives. That is, the rules are set up in such a way that the applicant has an incentive to conceal as much as it can get away with concealing. Second, perhaps paradoxically, the penalty for insufficient disclosure is so harsh and inflexible that it has led to substantial nullification.

The penalty for insufficient disclosure is the complete invalidation of the inventor's patent. This is harsh if a valuable patent is jeopardized by a minor oversight by the applicant, yet no less drastic penalty is available. That makes enforcers loath to enforce the rule outside egregious cases.⁴⁵ There is no doubt that current rules focus tightly on the intent of the applicant as a result.⁴⁶ Because intent can be difficult to prove, the current rules are often said to evoke less than robust disclosure of prior art on the part of patent applicants.⁴⁷

43. *Mech. Plastic Corp. v. Rawlplug Co.*, 14 U.S.P.Q.2d (BNA) 1058, 1060-61 (S.D.N.Y. 1989).

44. *See, e.g., Intirtool, Ltd. v. Texar Corp.*, 369 F.3d 1289 (Fed. Cir. 2004) (continuing the long Federal Circuit trend of finding no inequitable conduct during patent prosecution).

45. In the context of capital punishment, a similar dynamic is called nullification, where juries have been reluctant to convict when the penalty for relatively minor offenses has seemed harsh.

46. *See, e.g., Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1312 (Fed. Cir. 2000) (holding that false disclosure or withholding of information from the USPTO must be accompanied by intent to deceive or mislead the examiner into granting a patent).

47. This is a frequent lament of those concerned with patent quality. *See, e.g., Eugene R. Quinn, The Proliferation of Electronic Commerce Patents: Don't Blame the PTO*, 28 RUTGERS COMPUTER & TECH. L.J. 121, 150 (2002). Concerns with the subjectivity and inadequacy of the doctrine led the prestigious panel reviewing patent law reform for the National Research Council of the National Academies of Science to recommend scrapping or seriously revising the doctrine:

In view of its cost and limited deterrent value the committee recommends the elimination of the inequitable conduct doctrine or changes in its implementation. The latter might include ending the inference of in-

Just as one cannot enforce traffic laws with nuclear weapons, such a harsh all-or-nothing penalty is unlikely to be used to discipline violations other than the most egregious. If a lesser penalty were available, applicants paradoxically might face stricter enforcement of the duty. For example, a rule that permitted a court to deduct time from the tail end of a patent, in proportion to the gravity of the applicant's misfeasance during prosecution, might encourage courts to apply the threshold test strictly. Then, any adjustments needed in the interests of fairness, such as determining the exact amount of time that should be subtracted, could be made at the penalty stage.⁴⁸ There is no meaningful reform initiative on the table along these lines.

Instead, the Federal Circuit relaxed the stringency of the inequitable conduct doctrine. This may partly reflect the reluctance to use the harsh penalty. In addition, the court did not want to give competitors and customers too much incentive to comb through the patent prosecution record and the prior art, looking for clever ways to show that the patentee shaded a disclosure or failed to cite or discuss a piece of prior art.⁴⁹ As a result, the search and disclosure requirements for inventors are in many ways quite lenient. The rule is that if the inventor knows of information material to patentability, he must disclose it, but the inventor has no affirmative duty to search the prior art,⁵⁰ and often little incentive to do so. The default rule is that it is the patent examiner, not the applicant, who must search for

tent from the materiality of the information that was withheld, de novo review by the Federal Circuit of district court findings of inequitable conduct, award of attorney's fees to a prevailing patentee, or referral to the USPTO for reexamination and disciplinary action. Any of these changes would have the effect of discouraging resort to the inequitable conduct defense and therefore reducing its cost.

NAS STUDY, *supra* note 1, at 100.

48. Interestingly, a move in this direction would mirror the evolution of a similar change in tort law. Courts in a bygone era completely excused wrongful behavior on the part of a tortfeasor if the victim of the tort had also been at fault to any degree (contributory negligence). This all or nothing rule was subject to a powerful critique: in cases where victims are likely to be partially at fault, prospective tortfeasors have little reason to be careful. The solution was to switch to comparative negligence, under which monetary liability is apportioned in accordance with the relative fault of the tortfeasor and the victim.

49. It is not clear that this is a legitimate fear. When a patent is invalid, it is a public service to prove it, so the concern must be that challengers would be able to find evidence that would wrongly convince a court that the patent was invalid. Moreover this possibility must outweigh the positive externality of a diligent search for evidence of invalidity. This strikes us as unlikely.

50. FTC REPORT, *supra* note 2, ch. 5, at 8.

prior art.⁵¹ Patent examiners have a variety of resources, but search by the applicant would surely be helpful. Society fails to use available information if the applicant has little incentive to search and can get away with disclosing only favorable or obvious information.⁵²

This argues for a different approach, in which the system as a whole is set up in such a way that the applicant has a strong but supple incentive to search for and reveal relevant information.⁵³ For instance, Professors Lemley and Shapiro have discussed a tiered system in which patent applicants choose the level of review (and concomitantly the strength of a presumption of validity).⁵⁴ One could also give patentees better incentives to find prior art early by penalizing them if their patents are overturned. After all, such a patentee almost caused harm to economic efficiency and more substantial harm to other economic actors.⁵⁵ But setting up a liability-like incentive is difficult because when the patentee actually causes harm, it is through an invalid patent that is not overturned. This situation is almost by definition impossible to diagnose, so there is an inevitable mismatch between actual harm and observed indicia. As a result, a policy of penalizing patentees whose patents are overturned will have drawbacks (making pat-

51. *Id.* at 7.

52. Applicants do have some incentive to search, because if the examiner finds prior art and the application cannot be reformulated to avoid it, the applicant has lost its application costs. But unless examiners will find all prior art, the applicant's incentive to search (and disclose) ought to include the expected social costs of potential issuance of an invalid patent if the examiner misses prior art that the applicant would have found. As we discuss in the text, contrary to Professor Lemley, those social costs are not limited to actual litigation costs for a small number of wrongly issued patents.

53. An important empirical study found that patents invalidated in litigation for reasons pertaining to prior art were much more likely to involve prior art that was *not cited* by the applicant during patent prosecution. John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 231-34 (1998). An optimist might interpret this to suggest that if you expect to litigate your patent, it is wise to cite as much prior art as possible, but the correlation need not imply causation. Moreover, for the reasons established earlier in this Article, and as supported by extensive statistical evidence, there are many reasons to expect that a patent will never be litigated. Thus, this empirical finding falls far short of supporting the notion that patentees already have adequate incentive to make full investigation and disclosure of prior art.

54. Lemley & Shapiro, *supra* note 24, at 17.

55. This statement reflects the fact that the harm to others from the patentee's potential ability (but for the overturning of the patent) to collect a tax is largely—though not fully—counterbalanced in terms of ex post efficiency by the gain to the patentee. It is not immediately clear whether the difference (the deadweight loss) or the harm to others is the right measure of harm to be deterred.

entees defend invalid patents all the more vigorously) as well as the desirable effect of encouraging search and disclosure to the USPTO.⁵⁶

B. Other Opposition Proceedings

Potential infringers and their customers also may have rich information on patent validity. That information could in principle feed into the system through *ex post* litigation. But if, as we argue, litigation's high costs make the asymmetry of stakes matter a lot, litigation may not bring forward such information as reliably and forcefully as one would wish. One response would be to add a lower-cost, post-issuance proceeding in which customers, competitors, and others could adduce evidence of invalidity.⁵⁷ The stakes will still be unbalanced, but if costs are low enough this might not matter so much.

There are currently two statutory routes to patent reexamination that can be used by anyone who wants to challenge an issued patent. The first, instituted in 1980, is seldom used, due largely to the limited participation permitted to those who request a reexamination. The second was designed to remedy this issue, and allows more participation by the requester, but a challenger who raises an issue during this type of reexamination cannot revisit that issue in later infringement litigation.⁵⁸ This feature makes the new reexamination system even more ineffectual than the old one, as we discuss below. The new system came into effect in 1999, and only a small number of requests have been submitted under it so far—even though over 700,000 patents have issued since 1999.⁵⁹

56. Nevertheless, there is a rule under antitrust law establishing liability for patent applicants who apply for patents they know to be invalid. *See Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 176 (1965). Perhaps it is time to revisit the *Walker Process* rule, which has been applied in very few cases in recent years.

57. This needs to be post-issuance only because it really needs to be post-disclosure. If, as is now sometimes the case (and as the FTC has recommended should more uniformly be the case), applications become public after eighteen months, an opposition procedure could begin then and not wait until issuance. FTC REPORT, *supra* note 2, ch. 5, at 15. Indeed, there might be gains from allowing the examiner to see the opposition's case before he makes his decision.

58. Until November of 2002, a reexamination requester did not even have the right to appeal a reexamination proceeding that went unfavorably. While that has changed, requesters who lose a reexamination request are still fully estopped from using the same prior art in subsequent patent infringement litigation—that is, if they are later sued by the patent holder.

59. *See* USPTO, PERFORMANCE AND ACCOUNTABILITY REPORT 2003, *supra* note 4.

1. "Old" Reexaminations Under the 1980 Act

In 1980, Congress was apprised that high-cost district court litigation⁶⁰ was the only effective way for third parties to invalidate a patent. Congress was moved by this testimony to create the first reexamination system, which was described as a "relatively inexpensive" way to invalidate patents.⁶¹ Thus, the 1980 Reexamination Act was born of a concern to allow low-cost validity challenges to patents.⁶² But the legislative history of the Act makes it clear that Congress was also worried that reexaminations could run amok, and in particular that multiple patent challenges could be used to harass a patentee.⁶³ This concern about the strategic abuse of reexaminations led to severe limitations on third parties' rights to participate in the process once a reexamination was launched.⁶⁴ It was also factored into the drafting of the part of the Act that specifies the grounds for reexamination.⁶⁵ Collectively, these limitations make reexamination look much more like simply a mere repeat of the original *ex parte* patent examination, albeit with some new information.

Patent examination is in many ways steered by the patent applicant, and tightly constrains the discretion of patent examiners. Thus, even where a patent challenger has introduced evidence that a patent is invalid, the patentee has many opportunities to reframe the issue, rebut the evidence, and otherwise put its own spin on the information. This agenda control is a powerful weapon for patent applicants. It is not enough to permit a patent challenger to send a copy of a technical article or prior patent to the

60. See H.R. REP. NO. 96-1307, pt. 1, at 4 (1980), reprinted in 1980 U.S.C.C.A.N. 6460, 6462-63 (1980) (estimating average cost of defending patent infringement claim at \$250,000). Taking inflation into account, this translates into a cost of \$700,000 today. See Allen M. Leung, *Legal Judo: Strategic Applications of Reexamination Versus An Aggressive Adversary (Part I)*, 84 J. PAT. & TRADEMARK OFF. SOC'Y 471, 480 (2002).

61. See H.R. REP. NO. 96-1307, pt. 1, at 4, reprinted in 1980 U.S.C.C.A.N. at 6463 (stating that reexamination meets the need for "useful and necessary alternatives for challengers and patent owners to test the validity of [a] patent in an efficient and relatively inexpensive manner").

62. Pub. L. No. 96-517, 94 Stat. 3015 (codified at 35 U.S.C.).

63. H.R. REP. NO. 96-1307, pt. 1, at 3-4, reprinted in 1980 U.S.C.C.A.N. 6460, 6463 (1980).

64. *Id.* at 6-8, reprinted in 1980 U.S.C.C.A.N. 6460, 6465-67 (1980); see 35 U.S.C. §§ 311-318 (codification of *inter partes* reexamination).

65. H.R. REP. NO. 96-1307, pt. 1, at 6-7, reprinted in 1980 U.S.C.C.A.N. 6460, 6466-67 (analyzing § 303 of the 1980 Reexamination Act, which stated that the Commissioner could order reexamination upon the determination that a "'substantial new question of patentability' is raised in connection with any claims of the patent against which a patent or printed publication is cited"); see 35 U.S.C. § 302 (2000) (codification of the standard).

USPTO, though that is all that is currently allowed. Lawyers being lawyers, applicants' counsel will take advantage of wiggle room in the conceptual space between a prior art reference and the claims of a patent. Unable to challenge the patentee's characterization and spin, the challenger is hardly on an equal footing. For these reasons, old-style reexaminations do not create much of a forum for robust challenges to patent validity.

The original reexamination system has been at best a modest success. Although it is an imperfect measure, it is striking that less than 1% of issued U.S. patents are ever challenged by a reexamination request (see Table 2⁶⁶), whereas the opposition rate in Europe is roughly 8%.⁶⁷ Dissatisfaction with this system led to attempts at reform that culminated in the new reexamination system implemented in 1999.

Table 2
***Ex Parte* Reexamination (FY 1999 – FY 2003)**

Activity	1999	2000	2001	2002	2003
Total requests filed:	385	318	296	272	392
By patent owner	173	137	144	121	163
By third party	181	172	150	140	239
Commissioner ordered	31	9	2	11	17
Total determinations on requests	367	338	342	272	381
Requests granted:					
By examiner	327	320	263	262	360
By petition	1	2	2	1	1
Request known to have related litigation	62	80	80	52	109

66. USPTO, PERFORMANCE AND ACCOUNTABILITY REPORT 2003, *supra* note 4, tbl.13A, available at http://www.uspto.gov/web/offices/com/annual/2003/060413a_table13a.html.

67. See STUART J.H. GRAHAM ET AL., POST-ISSUE PATENT "QUALITY CONTROL": A COMPARATIVE STUDY OF U.S. PATENT REEXAMINATIONS AND EUROPEAN PATENT OPPOSITIONS 2 (Nat'l Bureau of Econ. Research, Working Paper No. 8807, Feb. 2002). The Graham et al. study found that the rate of opposition for the subset of patents studied is more than thirty times higher in the European Patent Office compared to reexamination at the USPTO, and that opposition leads to a revocation of the patent in about 41 percent of the cases, and to a restriction of the patent right in another 30 percent of the cases—compared to reexamination which results in a cancellation of the patent right in only 12.2 percent of all cases. Note that opposition rates would also be low if the USPTO reliably issued only valid patents, or if patentees knew that a weak patent would be overturned and refrained from asserting it.

2. "New" Reexaminations: Going Backward

In 1999, Congress introduced a new *inter partes* ("among parties") reexamination system,⁶⁸ designed to fall into the same general category as full-blown litigation, in answer to the criticisms about lack of participation in the old reexamination system. The new system is optional; it co-exists with the old one.

The new system permits greater participation, but this comes at a steep price. Under the 1999 Act, any issue raised by a challenger during reexamination cannot be revisited in a later trial involving that challenger.⁶⁹ This creates huge risks for challengers, who must trust that the USPTO will not make any mistakes in handling the reexamination. There is no opportunity to litigate the issue again in court. The broad consensus among patent experts is that these risks are too great.⁷⁰ Since the Act was passed, there have been only twenty-six requests for *inter partes* reexaminations.⁷¹ Legislative changes in 2002 expanded the right of appeal for unsuccessful requesters,⁷² but this has obviously not yet caused a flood of requests. While some hope that the new-style request will catch on,⁷³ that does not seem likely until Congress changes the statute to reduce the risks of using the current system.

3. Towards an Effective Post-Grant Revocation System

We have tried to show the crying need for an effective way to invalidate patents after they are issued without going to court. For all the reasons recited in the preceding paragraphs, the existing reexamination options fall far short of what is needed. While other articles in this issue provide much more detail about what a new system should look like, we do pause here to emphasize one caveat.

There is another side to the patent revocation story, one we have not emphasized. Post-grant patent revocations could be misused by firms who

68. Pub. L. No. 106-113, 113 Stat. 1501 (codified in sequence beginning at 35 U.S.C. § 311). See generally Kenneth L. Cage & Lawrence T. Cullen, *An Overview of Inter Partes Reexamination*, 85 J. PAT. & TRADEMARK OFF. SOC'Y 931 (2003).

69. 35 U.S.C. § 317 (2000).

70. See, e.g., Mark D. Janis, *Inter Partes Patent Reexamination*, 10 FORDHAM INTEL. PROP. MEDIA & ENT. L.J. 481, 498 (2000) (criticizing this feature of reexaminations, among others).

71. See USPTO, PERFORMANCE AND ACCOUNTABILITY REPORT 2003, *supra* note 4, tbl.13b, available at http://www.uspto.gov/web/offices/com/annual/2003/060413b_table13b.html.

72. 21st Century Department of Justice Appropriations Authorization Act, 35 U.S.C. § 315(b) (2002).

73. See, e.g., Leung, *supra* note 60.

simply want to slow down or injure a patentee-firm. True, the lower cost of a revocation procedure relative to litigation will reduce the prospect of this sort of harm. But because the harm is still possible, safeguards must be built into the revocation system to prevent it from being overused. One response would be to limit patent revocations to some specific time period after the grant of a patent. This is far from ideal, given that the value of some patents will not be known, and hence the gains from invalidating these patents will not become clear, until well after patent issuance. Yet the general policy in the law of property favoring settled title argues for a cutoff to the post-grant challenge period. This will allow expectations regarding the value of the patent to settle, engendering commercial stability and fostering the market for patent licensing.⁷⁴

VI. CONCLUSION

The economics of patents often create a grave imbalance of incentives between a patentee and a potential challenger to the patent. Incentives within litigation itself will be unbalanced, especially when a failed challenge will not penalize an infringer relative to no challenge at all. The fact that litigants in important cases typically choose to spend a lot of money implies that spending raises the probability of a favorable outcome. Hence, unbalanced incentives are apt to create biased outcomes. Meanwhile, incentives to challenge at all are unbalanced when a patentee is expected to severely punish an unsuccessful challenger. All this makes litigation an inadequate substitute for adequate patent examination at the USPTO.

This is a serious problem because invalid patents are a costly drain on the economy. If the patent litigation game encourages settlement in cases involving invalid patents—and we believe it is—then that game is costing society a great deal of money. As we have demonstrated, when a patentee is expected to play hardball and severely penalize failed challenges, actual challenges are apt to be prosecuted much more seriously and final adjudications are likely to be more reliable. But hardball tactics can often penalize challengers quite severely at little *ex post* cost to a patentee. In negotiation between a patentee and a single challenger, privately attractive settlements that short-change non-participants, and downstream customers in particular, are a likely result. Thus, although challenges prosecuted to completion would yield relatively fair results, there will be very few such challenges, and patentees will be able to extract royalties disproportionate

74. See Steven G. Kunin & Anton W. Fetting, *The Metamorphosis of Inter Partes Reexamination*, 19 BERKELEY TECH. L.J. 971 (2004).

to their patents' likely strength. Often, in economic terms, indirect purchasers pay this cost rather than direct infringers.

Congress should recognize that if indeed patents are important, it is worth generously funding USPTO review, and that if the alternative is enforcement of bad patents, generous USPTO funding is a bargain. At the same time, policy should push applicants harder to disclose not only what they actually (and probably) know about prior art, but also to investigate it, preferably before filing. Finally, because all these reforms will still let some bad patents issue, we need a workable administrative post-issue or post-disclosure challenge, which should be cheap, so that the skewed incentives (which will exist) will not bias results as much as they likely do in litigation. All these changes should help patents to continue their role of encouraging innovation at a reasonable cost to society.

APPENDIX

This appendix illustrates two points. First, pass-through can be a powerful reason why direct infringers may bear little of the burden of per-unit royalties that are charged uniformly. Second, it can be very cheap for a patentee to discriminate among licensees—for instance, on the basis of whether a licensee challenges the patent. This gives the patentee a threat with which to deter challenges while sacrificing little profit even if the discriminatory scheme must actually be implemented (which, if it achieves its goal, it need not be).

First, consider the incidence of a uniform per-unit royalty r in a moderately competitive industry. Specifically, consider a symmetric Cournot (capacity-setting) industry with n firms of equal size, facing an industry demand elasticity of e , and with a constant and symmetric marginal cost of $c + r$. How much does each firm's profit vary with r , relative to the total amount of license revenue generated by r ?

Since the firm-specific demand elasticity is ne , the equilibrium price will satisfy the standard Lerner equation:

$$[p - (c + r)]/p = 1/[ne],$$

so that

$$p = ne(c + r)/[ne - 1].$$

Industry demand is $Q = p^{-e}$, from which we can calculate industry profits $[p - (c + r)]Q$ and total license revenues rQ . The effects of a relatively modest royalty r on industry profits and on license revenues are given by the partial derivatives with respect to r . The key number is the

ratio of these derivatives. Calculation shows that the ratio of the marginal effect of r on industry profits, to the marginal effect of r on license revenues, is given by $(e - 1)/(ne - 1)$ times $(c + r)/(c + r - er)$, which for small $[r/c]$ is just $(e - 1)/(ne - 1)$. Note that when $e > 1$ this ratio is always below $[1/n]$, so the pass-through effect saps incentives to challenge even more than the public-good effect. But there is no particular need to compare them: they operate in tandem.

For example, if $n = 5$ and $e = 2$, the ratio of marginal effects is $[1/9]$: a small royalty hurts the direct licensees in aggregate only $[1/9]$ as much as it benefits the patentee. Further calculation shows that in this example, when r is five percent of the equilibrium price, and scaling demand so that total industry revenues pQ are equal to \$1 billion and royalties are \$50 million, total industry profits are \$100 million (\$20 million for each of the five firms) and would increase only by $[1/17]$, to approximately \$106 million, if the royalty were removed. Thus, the industry's collective incentive to overturn the patent (if that were the royalty rate) would be only \$6 million, versus the patentee's \$50 million incentive to defend it. This analysis formalizes a similar insight from a recent book by William Landes and Richard Posner concerning incentives of IP-owning firms in the legislative lobbying context.⁷⁵

Now consider the profit impact of discriminatory license terms. Here there are two key pieces of economics to keep in mind. First, if all competitors are paying 1% and firm X must pay 2%, the first 1% is likely to be largely passed through as discussed above, but the additional 1% paid by firm X is borne by firm X . It may affect the price X charges, but unlike the case discussed above, firm X is hurt by it. Second, if the patentee faces multiple licensees whose demand is unrelated (for instance, local monopolists in completely separate geographic or applications markets), it is not very costly for it to charge somewhat less than the profit-maximizing royalty to some licensees and somewhat more to others. This is because, by the standard first-order condition, the profit function is flat near the optimum.

75. See WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 407 (2003).

THE METAMORPHOSIS OF *INTER PARTES* REEXAMINATION

By Stephen G. Kunin[†] and Anton W. Fetting[‡]

TABLE OF CONTENTS

I.	INTRODUCTION	971
II.	THE CURRENT STATE OF POST-GRANT REVIEW	973
III.	POLICY GOALS OF POST-GRANT REVIEW	975
	A. Timing of the Patentability Challenge.....	976
	B. Timeliness of the Decision	976
	C. Scope.....	976
	D. Predictability and Uniformity—Legal Experience.....	977
	E. Reliability and Transparency—Electronic Records Management.....	977
IV.	THE PROPOSAL	978
	A. Estoppel Effects.....	978
	B. Cost Considerations.....	979
	C. Design Analysis.....	980
	1. Nature of Proceedings.....	980
	2. Timing of Review Proceeding	981
	3. Time for Completing Review Proceeding.....	982
	4. Grounds for Patent Review That May Be Brought in Review Proceeding	982
	5. Standing to Bring Review Proceeding.....	983
	6. Nature of Initial Showing Required of Third Party.....	983
	7. Discovery and Sanctions	983
	8. Nature of Evidentiary Showing	984
	9. Amendment of Claims in Review Proceeding.....	984
	10. Settlement.....	985
	11. Judicial Review	985
	12. Relation to Other Post-Grant Proceedings.....	985
V.	SPECIFIC LEGISLATIVE PROPOSALS FOR IMPLEMENTATION.....	985
VI.	CONCLUSION	988

I. INTRODUCTION

There is a compelling need to metamorphose *inter partes* reexamination into a post-grant review proceeding because adoption of a well-

© 2004 Stephen G. Kunin and Anton W. Fetting

[†] Deputy Commissioner for Patent Examination Policy, U.S. Patent & Trademark Office.

[‡] Office of Patent Legal Administration, U.S. Patent & Trademark Office.

The ideas and comments expressed in this article are those of the authors and should not be attributed to the U.S. Patent and Trademark Office.

designed post-grant process would improve patent quality, reduce the cost of confirming patentability, and increase efficiency. Such a transformation would result in a more predictable, reliable, and timely confirmation of patentability.

This Article proposes a new post-grant review process based on the experience of the United States Patent and Trademark Office (USPTO) with *inter partes* reexamination to date. The proposal looks to and adopts aspects of the USPTO's *21st Century Strategic Plan*,¹ as well as comments received by the USPTO during its Round Table Meeting on The Equities of *Inter Partes* Reexamination Proceedings ("*Inter Partes* Round Table") held in February of 2004,² and related comments from the National Research Council.³ As a result, the proposed post-grant review process would require a *prima facie* case of unpatentability for initiation. Proceedings would be bifurcated into those initiated within one year from patent grant or reissue and those initiated later. Proceedings initiated within the first year would have a lower fee, be available to anyone, allow consideration of any issue of patentability, and limit estoppel to issues actually raised. In contrast, proceedings requested after the first year would have a higher fee, be available only to parties with a significant economic or proprietary interest in the validity of a patent, and apply estoppel to any issue raised or that could have been raised. Overall, the procedure would require total electronic conveyance and maintenance of records, be conducted at a newly nominated Board of Patent Adjudication ("BPA") by a panel of three administrative patent judges (APJs), and have limited forms of discovery.

Parts II and III, respectively, of this Article review the current state of post-grant review and discuss the policy goals driving the proposal. Part

1. The *21st Century Strategic Plan* identified the need for applicants and the USPTO to share responsibility in the patent process. One action the plan identified was to "[m]ake patents more reliable by proposing amendments to patent laws to improve a post-grant review of patents." USPTO, THE 21ST CENTURY STRATEGIC PLAN 13 (2003) [hereinafter USPTO PLAN], available at http://www.uspto.gov/web/offices/com/strat21/stratplan_03feb2003.pdf.

2. USPTO, Round Table Meeting: The Equities Of *Inter Partes* Reexamination Proceedings (Feb. 17, 2004) [hereinafter *Inter Partes* Round Table] (commenting on the USPTO's *inter partes* experience to date and making recommendations for a reexamination procedure), available at http://www.uspto.gov/web/offices/pac/dapp/opla/comments/reexamproceed/round_tbl_transcript.pdf.

3. NAT'L ACAD. OF SCIS., A PATENT SYSTEM FOR THE 21ST CENTURY (Stephen A. Merrill et al. eds., forthcoming 2004) [hereinafter NAS STUDY], available at <http://www.nap.edu/books/0309089107/html>.

IV details the structure of the proposal. Finally, the Article outlines the legislative changes required to effect such an evolution in Part V.

II. THE CURRENT STATE OF POST-GRANT REVIEW

Intellectual property's value derives from the rights it confers to mine a claim in today's information based, knowledge driven economy.⁴ Uncertainty and the compressed life of intellectual property have created a growing interest in, and higher expectations for, quality, timeliness, and efficiency in the granting of intellectual property rights.⁵ Such expectations are driven by the immense economic incentives engendered by those rights and the consequent drive for further innovation.

A process for administratively reassessing patentability quickly, reliably, and predictably is essential if we are to channel valuable resources currently spent on defending intellectual property into exploiting and creating new economically valuable intellectual property. For this reason, confirming patentability becomes ever more significant. Raising and resolving patentability issues at the earliest time and in the most comprehensive manner is necessary to strengthen both patents and, more broadly, the intellectual property rights they afford.⁶

Currently, third parties have a limited pre-grant opportunity to protest or oppose issuance of a patent.⁷ Patent law precludes protest or other pre-issuance opposition after the publication of an application unless the applicant gives express written consent.⁸ The public may file information disclosures, but only up to the earlier of two months following the application's publication or allowance.⁹ Such disclosures may not discuss or highlight their relevance,¹⁰ because of the potential for harassing effect. Current rules allow an inquiry into whether a patent claim had been on

4. See, e.g., John Perry Barlow, *The Economy of Ideas: A Framework for Rethinking Patents and Copyrights in the Digital Age*, WIRED, Mar. 1994, available at <http://www.wired.com/wired/archive/2.03/economy.ideas.html>.

5. See NAS STUDY, *supra* note 3, at 22-29 (discussing the surge in patent activity).

6. [A]n *inter partes* reexamination proceeding that is filed soon after a patent issues and that brings forth non-removable art may be a blessing in disguise because it will focus the patentee in other areas and save resources in that regard. Such a decision would be especially important for small entities with more limited resources.

Inter Partes Round Table, *supra* note 2, at 10-11 (remarks by Michele Cimbala, Esq., Sterne, Kessler, Goldstein & Fox PLLC).

7. See 35 U.S.C. § 122(c) (2000).

8. *Id.* § 122(c).

9. 37 C.F.R. § 1.99 (2004).

10. *Id.* § 1.99(d).

sale or in public use over one year prior to filing, but only before the application's publication or allowance, whichever is earlier.¹¹ These submission deadlines constrain the public's awareness of an application and limit the opportunity to question patentability.

Existing administrative post-grant proceedings raise and resolve patentability issues arising after examination and patent grant, but leave much to be desired.¹² Post-grant review of a patent currently takes place before the USPTO when: (1) an applicant files an application to reissue a patent; (2) when an interference is declared; (3) a patent owner or a third-party requests reexamination of the patent; or (4) the Director initiates reexamination of a patent on his own initiative.¹³

Ex parte reexamination, whether initiated by a patent's owner, the USPTO Director, or a third party,¹⁴ and reissue examination have been the traditional post-grant review tools. These measures limit third party participation to an initial statement. Furthermore, the patent which emerges from these proceedings assumes a presumption of validity which only litigation can challenge.¹⁵ More recently, the introduction of *inter partes* reexamination practice the American Inventor Protection Act ("AIPA"), in 1999, and AIPA's subsequent amendment, in 2002, to afford third parties the right to appeal decisions to the U.S. Court of Appeals for the Federal Circuit, have expanded third party participation rights, resulting in increased interest in this proceeding.¹⁶

All of the administrative post-grant proceedings detailed above have other serious shortcomings. Examination procedures are lengthy and time consuming,¹⁷ and their results lack uniformity due to the large number of examiners. More notably, the estoppel provisions of *inter partes* reexamination limit this procedure's attractiveness as a remedy, because requesters

11. *Id.* § 1.292.

12. See USPTO, *Post-Grant Review of Patent Claims*, at <http://www.uspto.gov/web/offices/com/strat21/action/sr2.htm> (last modified Nov. 23, 2003) [hereinafter USPTO, *Post-Grant Review of Patent Claims*] ("By using the Office's expertise, [post-grant] challenges could be adjudicated for less money and in less time than by civil suit. This will enhance the patent system as a whole by strengthening those patents that survive the review and eliminating those patents which contain unpatentable subject matter.").

13. *Id.*

14. See 35 U.S.C. §§ 302-307.

15. See *id.* § 307.

16. 35 U.S.C. § 315(b) (2000 & Supp. 2003). This section reflects the amendment introduced by the 21st Century Department of Justice Appropriations Authorization Act, Pub. L. No. 107-273, 116 Stat. 1758 (2002).

17. See, e.g., NAS STUDY, *supra* note 5, at 54-56 (discussing the length of patent pendency).

are completely precluded from raising in later proceedings any issue that could have been raised in the reexamination proceeding.¹⁸

Hence, while the existing reexamination tools provide valuable mechanisms to question patent validity, additional facilities are needed for third parties to adequately challenge patentability without unduly harassing patent owners. The USPTO's experience with *inter partes* reexaminations, the *21st Century Strategic Plan*, and the USPTO's *Inter Partes Round Table* all suggest the next step in the evolution of *inter partes* reexamination should be a transformation from the current practice into a greatly expanded form of post-grant review, available during a relatively short window of time.¹⁹

III. POLICY GOALS OF POST-GRANT REVIEW

The recent *Inter Partes Round Table* concluded that any proceeding that tested patented claims should be predictable, reliable, and timely.²⁰ In contrast, public perception is that the current patent examination, reissue, and reexamination systems do not satisfy these criteria. There was virtually unanimous agreement on the need for an effective *inter partes* post-grant review proceeding. The Roundtable identified five attributes required of a post-grant *inter partes* solution: (1) appropriate timing of the initial challenge; (2) timely decisions; (3) proper scope of the hearing, including estoppel effects; (4) predictable and uniform decisions; and (5) transparent proceedings.

Moreover, the roundtable clearly articulated a need for quieting patent claims' title by encouraging opposition timing early in a patent's life, while retaining failsafe protections against unforeseeable invalidity of a patent. A comprehensive plan must meet each of these goals.

18. *Inter Partes Round Table*, *supra* note 2, at 13 (“[B]y their nature, they [current estoppel provisions] detract from the attractiveness of using *inter partes* reexamination as a means to challenge a patent.”) (remarks by Michele Cimbala, Esq., Sterne, Kessler, Goldstein & Fox PLLC).

19. See USPTO, *Post-Grant Review of Patent Claims*, *supra* note 12 (“An expedited process providing for full adjudication by the Board of unpatentability of claims would help assure that those potentially affected by the economic burdens of patents with invalid claims can obtain prompt redress.”).

20. *Inter Partes Round Table*, *supra* note 2, at 53-54 (“Predictability, reliability, and timeliness. These are really more than slogans. There are really some concrete things that need to be done.”) (remarks by Harold Wegner, Esq., Foley & Lardner LLP).

A. Timing of the Patentability Challenge

Third parties should be encouraged to test patent claims as early as possible after issuance, when patent holders have invested the least resources and the opportunity for third parties to change course in the market is greatest. The *Inter Partes* Round Table suggested a time period of about nine months to two years, with one year as a useful benchmark for initiating post-grant review of a patent.²¹ Subsequent to this period, the likelihood that the patent owner would be practicing the invention more widely and that third parties might perform potentially infringing activities leads to a heightened need to protect patent owners against potentially harassing conduct. There are a large number of patents issuing each year, however, suggesting it may be impractical to sort out all patentability issues within one year.²² One roundtable participant suggested a second temporal breakpoint, at about five years, which would allow intermediate balancing between potential for harassment of patent owners and the duration required to identify patents that ought to be challenged by deferring the current estoppel provisions until the five year mark.²³

B. Timeliness of the Decision

Both time to initiation and time to decision are of concern in testing patentability; the sooner a patent is confirmed, the sooner the public and owner can have confidence in the patent rights.²⁴ While there is unanimous agreement that sufficient time should be given to the actual process of evaluating patentability, far too much time is consumed in administrative queuing delays and in evaluating additional issues in merged proceedings. These delays significantly lengthen the time a cloud hangs over patentability, and ought to be reduced.

C. Scope

To be effective, the scope of post-grant review, like validity litigation, must extend to all issues of patentability. Current law, however, restricts review to issues arising solely from prior art.²⁵ The policy of minimizing potentially harassing challenges can be better balanced against the need to

21. *Id.* at 77 (“[A]fter some fixed period, whether it’s nine months, one year, or two years, any reexam commenced after that time would have a statutory presumption of validity.”) (remarks by Harold Wegner, Esq., Foley & Lardner LLP).

22. NAS STUDY, *supra* note 3, at 22-29 (discussing the surge in patent related activity).

23. Harold Wegner, Open Review Post-Grant Patent Challenges, (June 1, 2004) (unpublished manuscript on file with authors).

24. NAS STUDY, *supra* note 3, at 34.

25. 35 U.S.C. § 311(a) (2000).

correct all patentability issues, including those unrelated to prior art, in a lower-cost, more expedient proceeding than litigation. Requiring a *prima facie* case for initiating a challenge, with adequate supporting analysis and evidence, would achieve this balance.

D. Predictability and Uniformity—Legal Experience

Of significant concern to patent owners is the lack of predictability in an examination conducted by one of more than 3500 patent examiners within the Patent Examining Corps. Although patent examiners possess technical education, the degree of legal training and experience varies widely. This disparity makes it nearly impossible to achieve uniform and consistent results.

To increase predictability, the newly cast BPA, staffed by administrative patent judges holding both extensive patent examination experience and law degrees, could conduct post-grant review proceedings sitting as three-judge panels.²⁶ APJs would either possess the necessary *inter partes* experience from patent interference procedures or would learn *inter partes* practice by consulting with experienced BPA members. As for legal knowledge, the academic rigor of legal analysis acquired in law school, actively honed on patent applications, reexaminations, and interferences, increases the assurance that like issues will be resolved in like manner, with a record for judicial review if subsequently sought. Thus, the legal expertise of APJs introduces greater predictability than that in patent examination. Additionally, three judge panels normalize the initial conclusions drawn by each member. This is particularly important in cases involving first impression, or in cases for which multiple, divergent opinions from the Federal Circuit exist.

E. Reliability and Transparency—Electronic Records Management

Reliability implies dependability and durability. The most effective tool for providing reliable post-grant review is electronic communication and record management techniques covering every facet of the proceedings.²⁷ This would immediately and accurately update the official record

26. *Inter Partes* Round Table, *supra* note 2, at 54 (“People are overwhelmed. They’re just overwhelmed. You’ve got to get a super group. You’ve got to . . . have a real cadre of accountable lawyer-examiners to handle it. Whether they’re administrative patent judges or whether they’re just some great lawyers, or whatever else, you’ve got to do that for predictability.”) (remarks by Harold Wegner, Esq., Foley & Lardner LLP).

27. *Id.* at 56 (“You take whatever resources you need and have all electronic filing of reexams, immediately. Everything’s electronic. You get rid of the scanning, get rid of

as each communication is received into or sent from the USPTO, encapsulating the complete history of the proceeding at any point in time.

IV. THE PROPOSAL

Several plans have been proposed for remedying the weaknesses in existing *ex parte* and *inter partes* procedures outlined above in Part II. Both the USPTO's *21st Century Strategic Plan* and the *Inter Partes* Round Table proceedings propose a transformation of the current system into an expanded post-grant proceeding available during a relatively short window.²⁸ However, neither of these plans is fully fleshed out. This Part proposes a comprehensive solution that retains the benefits of existing practice, incorporates the best suggestions of previous plans, and details new measures. The goal of this solution is to create a more timely, predictable, and reliable process.

Key to the proposal is the balancing of legal and economic costs to all involved parties against both the potential for harassment and the desirability of promptly quieting title in new patents. After reviewing the legal and economic costs, this Part lays out the procedure's design, demonstrates how it overcomes the challenges of estoppel provisions and cost, and details the statutory changes needed for implementation.

A. Estoppel Effects

The *Inter Partes* Round Table identified estoppel as the most significant issue in post-grant review.²⁹ Although the 2002 changes to *inter partes* reexamination removed the preclusion of judicial appeal for third party requesters, issue preclusion and collateral estoppel provisions were retained.³⁰ Many respondents suggested that recommending *inter partes* reexamination to a client was tantamount to committing malpractice be-

the paperwork, everything's electronic.") (remarks by Harold Wegner, Esq., Foley & Lardner LLP).

28. See USPTO, *Post-Grant Review of Patent Claims*, *supra* note 12.

29. *Inter Partes* Round Table, *supra* note 2, at 30.

Congress has interjected and raised the cost of—\$200,000 to \$400,000—the cost of any subsequent litigation to find out whether or not you knew about it and what your present intent was. It hurt the ability of the process to be considered really by the patent bar. And the patent bar, frankly, is not going to recommend to its clients that they proceed if they don't know and cannot tell the client what they're giving up and what the true costs are.

Id. (remarks by Lance G. Johnson, Esq., Roynance Abrams, Berdo and Goodman, LLP).

30. 35 U.S.C. § 315(c).

cause of estoppel effects.³¹ The upshot is that, absent a cold anticipating reference, *inter partes* reexamination is simply not an effective tool so long as requesters are completely precluded from raising in later proceedings any issue that could have been raised in the administrative proceeding.³²

The proposed post-grant review would address this concern by bifurcating the levels of estoppel, depending on when the review was initiated. To encourage early testing of patents, a less onerous estoppel would attach to reviews initiated within a year of grant. Issue preclusion would be limited to only those issues actually raised in first year *inter partes* proceedings. However, the existing complete estoppel would continue to attach to post-grant review proceedings initiated a year or more after grant.³³ This would assure that all possible issues would be presented in a single proceeding³⁴ and that the lower cost for such proceedings would not act as an enticement for harassment.

B. Cost Considerations

To make it an attractive alternative to litigation, the cost of a post-grant administrative proceeding should be two orders of magnitude less costly than litigation—in the range of \$8,000 to \$12,500. The USPTO can balance how the requester, the patent owner, and the patent system as a whole should share the internal costs incurred by the USPTO. The policy favoring testing patentability early argues for substantially reducing the fee for the procedure initiated during the first year following grant, perhaps by half, compared to the fee for subsequent initiation.

A less obvious cost is borne by third parties to develop the record of issues to be decided. The absence of a patent examiner in the proceedings

31. *Inter Partes* Round Table, *supra* note 2, at 40-41 (“Who knows what the scientists have in their files back in the office of which they’ve filed ten years ago and don’t remember? That’s a real problem for us.”) (remarks by Michele Cimbala, Esq., Sterne, Kessler, Goldstein & Fox PLLC).

32. *Id.* at 25 (“[A]s long as *ex parte* reexamination proceedings are an available alternative, I believe they will be more attractive. Estoppel provisions are not in place. They allow anonymity. And multiple reexaminations can be an effective strategy, which, in effect, creates something of an *inter partes* proceeding.”) (remarks by Beth Weimer, Esq., Morgan, Lewis & Bockius LLP).

33. Wegner alternately proposes deferring the higher estoppel burden for five years. Wegner, *supra* note 23.

34. *Inter Partes* Round Table, *supra* note 2, at 77 (“[T]here has to be an encouragement to file early; because if I’ve got a killer way of destroying a patent, as long as I act unilaterally I can sandbag that prior art or that issue and quietly develop my invention and have a shared monopoly.”) (remarks by Harold Wegner, Esq., Foley & Lardner LLP).

means that the third party must determine all of the patentability issues to be considered and find the best prior art upon which to challenge novelty and nonobviousness, including evidence for motivation to combine references.³⁵

This procedure, unlike *ex parte* reexamination, also requires an initiator to present a *prima facie* case of unpatentability. Two features offset these costs. First, the threat of estoppel, particularly for later filed challenges, would encourage a third party to fully develop the set of patentability issues reasonably pertaining to a patent prior to initiating a challenge. Second, limiting the issues to those raised by the parties benefits both sides and removes the uncertainty and delay associated with examination.

C. Design Analysis

The *21st Century Strategic Plan* identified twelve points of analysis for the design of a post-grant review system: (1) nature of proceedings; (2) timing of challenge; (3) timing of decision; (4) grounds for patent review; (5) standing to bring review proceeding; (6) nature of initial showing required of petitioner; (7) discovery and sanctions; (8) nature of evidentiary showing; (9) amendment of claims in review proceeding; (10) settlement; (11) judicial review; (12) relation to other post-grant proceedings.³⁶ This section discusses the proposal in terms of each of these twelve design points.

1. Nature of Proceedings

Both the NAS Study and the American Intellectual Property Law Association (AIPLA) have made constructive procedural suggestions, most of which this proposal takes up.³⁷ The post-grant *inter partes* proceeding

35. Responding to what search would be required for *inter partes* proceedings, one party commented:

[A]t least a search of the prior art that would be equivalent to the search you would expect a patent examiner to undertake, because I think that the worst situation would be that the examiners themselves find art that you didn't submit, but then you disagree with what the examiner does with that, because I think that any court would think that if the examiner found that you could have as well.

Id. at 43 (remarks by Beth Weimer, Esq., Morgan, Lewis & Bockius LLP).

36. USPTO PLAN, *supra* note 1; *see* USPTO, *Post-Grant Review of Patent Claims*, *supra* note 3.

37. *A Patent System for the 21st Century* suggests the following post-grant open review procedure: (1) any third party can initiate; (2) preponderance of evidence standard; (3) only the initiator would pay USPTO fee, but each party would bear own attorney fees; (4) patent file history available for the procedure; (5) conducted by an APJ; (6)

would be initiated by a third party, and have limited discovery; be heard before a tribunal of APJs without examination to minimize delay and yield the predictability of trained legal experience; enlarge the scope of contestable issues to provide a comprehensive alternative to litigation; and match the levels of estoppel and evidentiary standards to the timing of the proceedings to encourage early patentability challenges.

Electronic communications and processing would be used throughout the proceeding. Correspondence, briefs, affidavits, other forms of evidence, and administrative documents would be conveyed to and from the USPTO electronically. This would accelerate the procedure, make publication of the proceedings timely and accurate, as well as provide an official record easily accessed through the USPTO's website, whose inherent integrity would safeguard file history for evidentiary review.

2. *Timing of Review Proceeding*

Post-grant *inter partes* proceedings would be divided into those initiated within one year of grant and those initiated after one year. The same procedural steps would be available within each proceeding with changes only in the scope of contestable issues, evidentiary standards, fee, and estoppel effects. Post-grant proceedings initiated within one year of patent or reissue grant would carry a lower fee and the lower level of estoppel.³⁸ Outside this one-year period, the post-grant proceeding would be for a higher fee with full estoppel,³⁹ although estoppel levels could be alternatively increased at a later temporal milestone, up to a five-year mark.

The proceeding would commence with a party filing a request for post-grant review with the USPTO and service of notice to the patent holder. The challenge would have to set forth a *prima facie* case for unpat-

limited discovery; (7) would substitute for all third party reexamination proceedings; (8) validity challenged on any grounds; (9) matters previously considered by the examiner could be reviewed; (9) outcome would be confirmation, cancellation or amendment of each claim in dispute. NAS STUDY, *supra* note 3, at 79-80.

Similarly, Charles Van Horn made the following recommendations at the USPTO roundtable on behalf of the American Intellectual Property Law Association: (1) initiated within nine months of grant; (2) grounds limited to 35 USC §§ 102, 103, 112, first and second paragraphs; (3) direct evidence by declaration subject to cross examination by deposition; (4) assigned to an APJ; (5) Rights of appeal as in current *inter partes* proceeding; (6) no statutory estoppel; (7) final USPTO decision within one year. *Inter Partes* Round Table, *supra* note 2, at 64-65 (remarks by Charles Van Horn, Esq., Finnegan, Hendersen, Farabow, Garrett & Dunner, LLP).

38. Estoppel would be limited to issues actually raised during the course of the proceeding. *See* Part IV.A *supra*.

39. Estoppel would cover both issues actually raised or that could have been raised in the proceeding. *See* Part IV.A *supra*.

entability of at least one patent claim. The patent owner would have an initial optional opportunity to demonstrate that the third party failed to make a *prima facie* case of unpatentability. If the USPTO found that a *prima facie* case had, in fact, been presented, the USPTO would order a post-grant review.

Procedurally, the patent owner would file arguments and any proposed narrowing amendments. This would be the single opportunity for the patent owner to amend or add any claims. The patent owner would be precluded from broadening claims or introducing new matter into the claims or disclosure. Any further amendments would only be introduced in a separate reissue or reexamination proceeding. The third party would have two months in which to supplement the post-grant review request based upon the proposed amendment. Evidentiary proceedings would commence, with each party submitting (and contesting) evidence to the USPTO. At the end of the evidentiary phase, both the patent owner and third party would present their evidence, arguments, and rebuttals before the BPA. Optional oral arguments would ensue, followed in turn by the Board's decision.

3. *Time for Completing Review Proceeding*

The post-grant review proceeding should proceed with special dispatch. A provisional maximum time frame for the entire proceeding, such as one year from the initiation date, may be prudent. However, this goal would be an aspiration rather than an absolute limit. The need for reliability and predictability over the years of patent term may trump the need for a few weeks or months early in the life of a patent.

4. *Grounds for Patent Review That May Be Brought in Review Proceeding*

Limiting the set of issues available to a challenger creates the incentive to choose more costly litigation that would be absent such limitations. Instead, policy favors the provision of a single forum for contesting all substantive patentability issues. Countering this is the potential for harassment engendered by the relative ease and minimal cost of initiating post-grant review proceedings. Therefore the post-grant review forum should be open to all issues for a limited time, such as one year.

According to this proposal, a post-grant review proceeding could be brought upon any patentability grounds not subject to estoppel. Requests within an initial period would be encouraged to quiet title by minimizing grounds estopped. Subsequent requests would safeguard against potential harassment by retaining full estoppel. Anyone initiating a review after the

initial period would have increased incentive to fully identify all issues to be raised.

5. *Standing to Bring Review Proceeding*

The bifurcation of post-grant review proceedings would also provide a lower threshold for standing during the first year following grant. The policy favoring testing of patentability within the first year argues for allowing any third party to initiate post-grant proceedings during the initial period. Beyond the first year, the potential for patent owner harassment would suggest that standing be limited to parties who can prove economic or tangible interest in the outcome of such a proceeding. Because a post-grant review procedure is far more burdensome than *ex parte* reexamination and open to abuse, any requestor would have to identify the real party in interest.

6. *Nature of Initial Showing Required of Third Party*

Any third party challenge would require a *prima facie* showing of unpatentability of at least one claim. The potential cost and impact of *inter partes* proceedings on the patent owner demands this burden to avoid harassment. The patent owner could optionally rebut by showing that the third party failed to make a *prima facie* case. The USPTO could nevertheless order the post-grant review if it found that at least one *prima facie* claim had been made.

7. *Discovery and Sanctions*

In instances where one party, generally the patent owner, presented and relied on evidence other than publicly available documents to obtain a patent,⁴⁰ some limited form of discovery might be granted.⁴¹ For example,

40. [T]he inequity arises when there's an imbalance in the bringing of this evidence through some glitches in the rules. For example, as I pointed out, when the third-party requester takes issue with critical facts such as inherent anticipation, incidental, rudimentary facts that are not stated in the prior art that elude review, and that, I might add, are not picked up in assessing the level of ordinary skill in the art by the examiners or they don't possess the level of ordinary skill to understand such rudimentary facts they've reviewed.

Inter Partes Round Table, *supra* note 2, at 37-38 (remarks by Miles Dearth, Esq., Lord Corporation).

41. For example, suppose a third-party requester successfully initiates an *inter partes* reexamination and the patentee rebuts the third-party requester's case by filing an affidavit. Such affidavits are not subject to the same scrutiny that they would be in federal court, including the lack of an opportunity for cross-examination. As a result, the examiner may

where one party produced an affidavit supporting patentability, the other party might be granted an opportunity to cross-examine the affiant by way of a deposition. If warranted, a party could also compel the production of evidence at issue but not in the record. An APJ would not necessarily be present at such proceedings, but such a proceeding would require approval of the APJs. Furthermore, the role of the USPTO in a post-grant review process would be limited to adjudication. The third party and patent owner would present the issues to be resolved in briefs before the BPA.

8. *Nature of Evidentiary Showing*

Reasonable challenges must be encouraged to effectively quiet title. Ultimately, the outcome of a post-grant review proceeding depends upon the burden of evidence. The policy of testing the patentability of a patent's claims and reaching a predictable, reliable resolution in a timely fashion argue for a deliberate lowering of the evidentiary threshold to a preponderance standard during the first year following grant. In addition, there would not be a statutory presumption of validity. This lowering of the evidentiary threshold would greatly encourage early filing of a post-grant review proceeding.⁴² Claims still in effect after the first year following grant would be more rigorous and reliable.

9. *Amendment of Claims in Review Proceeding*

Fairness compels offering the patentee some form of amendment opportunity in response to the challenges of unpatentability. However, this is offset by the need for timeliness and minimization of abuse. A suggested balance would require the requestor of a post-grant review proceeding to set forth all arguments at the initiation of the proceeding, with additional issues introduced only for good cause at later time. In turn, the patent owner would be afforded one opportunity to amend the claims in the response to the issues set out by the requestor. Amendments after the initial response, if permitted, would only be allowed for good cause. This would settle the claims at issue rapidly and eliminate the potential for harassing iterative amendments and arguments. Should the owner need to further amend claims, the avenue of filing for reissue would remain available.

be swayed by an affidavit even though the affiant's knowledge, qualifications, and skills have not been tested through a cross-examination process. In a later civil action, the third-party requester may be estopped from challenging the conclusions of the affiant.

Id., supra note 2, at 16-17 (remarks by Collin Webb, Esq., CNH America and American Bar Association Subcommittee for Patent Reexamination and Opposition).

42. *See id.* at 25 (remarks by Beth Weimer, Esq., Morgan, Lewis & Bockius LLP).

10. Settlement

In the interest of timeliness and efficiency, the post-grant review proceeding would be terminated based upon a proposed settlement by the patent owner in the nature of uncontested proposed amendments. The absence of an examination within the post-grant proceeding would likely result in the owner implementing the settlement by filing separately for reissue. Third party acquiescence would obviate involvement by the third party in the follow on reissue, and would apply the rigors of substantive examination to the proposed changes.

11. Judicial Review

A party seeking to overturn an adverse decision in a post-grant review proceeding would first request reconsideration by the Board of Patent Adjudication after pointing out alleged errors or interpretive differences. Should the Board issue an adverse decision after reconsideration, recourse could be had, as with existing law, to the Court of Appeals for the Federal Circuit.

12. Relation to Other Post-Grant Proceedings

While possible, the USPTO would generally disallow merger of post-grant review proceedings with other related proceedings, such as *ex parte* reexamination or reissue. The USPTO would likely stay any such related proceedings until the termination of the post-grant review to retain special dispatch within the post-grant review and to minimize the administrative burden in managing all such related proceedings.

V. SPECIFIC LEGISLATIVE PROPOSALS FOR IMPLEMENTATION

Inter partes reexamination law is codified at 35 U.S.C. §§ 311-318. The following proposals would affect the necessary legislative changes to metamorphose *inter partes* reexamination into a post-grant review system.

Section 311 would be amended to bifurcate the “any time” provision into separate time periods for each of two separate procedures.⁴³ A continued limited post-grant review procedure could be initiated more than one year after patent grant or reissue, whereas a more robust review proceeding would be available within one year from date of patent grant review. The fee requested in the first year would be less than that requested after one year, and the issue and collateral estoppel preclusion provisions would

43. See 35 U.S.C. § 311 (2000) (“Any third party requester at *any time* may file a request for *inter partes* reexamination by the office of a patent. . . .”) (emphasis added).

be reduced in scope for the post-grant proceeding requested within the first year. The criteria for challenging patentability would be expanded in post-grant review proceedings to allow all issues related to patentability to be contested.⁴⁴ The real party in interest requirement would remain.⁴⁵

Section 312 would change the standard for ordering an *inter partes* proceeding from a substantial new question of patentability to *prima facie* unpatentability of at least one patent claim.⁴⁶ Should the USPTO decide not to order an *inter partes* proceeding, the decision would be final and not open to appeal.⁴⁷

Section 313 would restrict the scope of a post-grant *inter partes* proceeding to the challenged claims, although the post-grant proceeding could be ordered on a single claim.⁴⁸

Section 314 would assign post-grant *inter partes* proceedings to the Board of Patent Adjudication conducted by panels of three APJs.⁴⁹ The requirement for special dispatch would remain.⁵⁰ The *inter partes* proceedings would allow for limited amounts of discovery to be carefully managed by the APJs. The limited nature of administrative patent proceedings would suggest that trial type proceedings between two opposing parties would not be permitted. An administrative patent judge must grant motions for specific discovery requests.

BPA control over the proceeding would eliminate reference to examination under 35 U.S.C. §§ 132 and 133.⁵¹ An opportunity for a single amendment would be provided, which, as with reexamination in general, could not enlarge the scope of the claims.⁵² The third party would be given two months to respond following a patent owner's reply to any communication in the proceeding.⁵³

44. *See id.* § 301(a) (currently allowing *inter partes* reexamination based on "any prior art cited under the provision of section 301").

45. *See id.* § 301(b)(1) (currently requiring identity of the real part of interest).

46. *See id.* § 302 (currently stating that the standard is whether "a substantial new question of patentability affecting any claim if the patent concerned is raised by the request").

47. *See id.* § 302(c) (determination by Director is final and non-appealable).

48. *See id.* § 313 (currently restricting scope to the determination of the substantial new question of patentability affecting a claim of a patent).

49. *See id.* § 314 (currently allowing the Director to establish regulations for reexamination per 35 U.S.C. § 132(b)).

50. *See id.* § 314(c) ("Special dispatch").

51. *See id.* § 314(a) (referencing 35 U.S.C. §§ 132 and 133).

52. *See id.* § 314(a) (currently permitting amendment that would not enlarge the scope of the patent).

53. *See id.* § 314(b)(a) (currently requiring response within thirty days of patent owner's response).

Section 315 would limit appeals to the Court of Appeals for the Federal Circuit.⁵⁴

Section 316 would remain the same,⁵⁵ while Section 317 would prohibit initiating other reexaminations to ensure special dispatch.⁵⁶ Similarly, section 317 would proscribe merger with other proceedings to avoid enlarging the scope of issues and the provision relating to unavailable prior art would be eliminated.⁵⁷

Section 318 would allow the USPTO to stay post-grant review proceedings where warranted in the interests of justice.⁵⁸ Settlements would be permitted to resolve issues expeditiously. The USPTO would still retain the authority for Director ordered reexaminations if issues remained after any such settlement.

Eligibility for patents subject to post-grant review proceedings would include all patents in force at the date of implementation.⁵⁹ However, patents one year or more past grant date would be subject to the second tier fee and issue preclusion effect. There would not be a transition provision permitting requestors to enjoy the benefits of the lower fee and issue preclusion features for patents that were more than one year old as of the new law's effective date.

54. *See id.* § 315 (referencing ability to appeal to Board of Patent Appeals and Interferences as well as the United States Federal District Court for the District of Columbia).

55. *See id.* § 316(a) (currently requiring the Director to issue a certificate once the time for appeal is expired or any appeal proceeding has terminated).

56. *See id.* § 317 (currently preventing third parties from filing subsequent requests for *inter partes* reexamination once an order for *inter partes* reexamination has been issued or once a final decision has been entered against the third party who unsuccessfully challenged the validity of the patent in civil litigation or *inter partes* reexamination).

57. *See id.* § 317(b) (currently stating that “[t]his subsection does not prevent the assertion of invalidity based on newly discovered prior art unavailable to the third-party requester and the Patent and Trademark Office at the time of the *inter partes* reexamination proceedings”).

58. *See id.* § 318 (currently permitting patent owner to stay any pending litigation involving an issue of patentability once an order for *inter partes* reexamination of a patent has been issued).

59. First, and most importantly, and as previously recognized, the 1999 legislation should be made retroactive so that it would apply to patents filed before November 29, 1999, as well as after. . . . In fact, I believe that's the single change that needs to be made to have the system used more frequently.

Inter Partes Round Table, *supra* note 2, at 59 (remarks by Nancy Linck, Senior Vice President and General Counsel, Gullford Pharmaceuticals).

VI. CONCLUSION

This Article proposes a metamorphic evolution of *inter partes* reexamination, from a single track, time consuming procedure that severely limits subsequent validity checks, into a bifurcated, responsive, more legally precise post-grant *inter partes* review practice, thus increasing availability of subsequent validity checks.

Existing administrative challenges to patent validity weigh heavily toward minimizing harassment of patent holders and away from encouraging challenges. But challenges are the most effective means for quieting the title of patent holders and ought to be encouraged early in a patent's life when uncertainty regarding validity is greatest and investment is least.

The proposed post-grant review proceeding would improve patent quality, reduce the cost of confirming patentability, and increase efficiency, resulting in a more predictable, reliable, and timely confirmation of patentability. Requiring a *prima facie* case of unpatentability for initiation would minimize the potential for harassment. Quieting title with early requests would be encouraged by a lower fee, universal availability, an enlarged scope, and minimized estoppel effects. After the first year, the proceeding would have a higher fee, be available only to parties with a significant economic or proprietary interest in the validity of a patent, and apply full estoppel. Conducting the proceeding before three APJ panels would enhance the process's reliability and predictability, as would the total electronic conveyance and maintenance of records and the availability of limited forms of discovery.

POST-GRANT REVIEWS IN THE U.S. PATENT SYSTEM—DESIGN CHOICES AND EXPECTED IMPACT

By Bronwyn H. Hall[†] and Dietmar Harhoff[‡]

ABSTRACT

Several policy review boards have advocated the introduction of post-grant patent review mechanisms in the U.S. patent system. We discuss to what extent “patent quality” has been deteriorating in the U.S. patent system and then consider the expected impact of post-grant review mechanisms as advocated by the policy review boards. We take a detailed look at the experience with the opposition mechanism at the European Patent Office. Our results indicate that a properly designed U.S. post-grant review could generate high welfare gains. We also discuss the design choices faced by policymakers in the United States and provide recommendations.

TABLE OF CONTENTS

I.	INTRODUCTION	989
II.	“PATENT QUALITY”	991
	A. Defining “Patent Quality”	991
	B. Consequences of Low Patent Quality	992
III.	PROBLEMS IN THE U.S. PATENT SYSTEM	995
IV.	REFORM PROPOSALS AND THE PROMISE OF POST-GRANT REVIEW MECHANISMS	1000
V.	A LOOK AT THE EUROPEAN EXPERIENCE	1002
VI.	KEY DESIGN CHOICES AND EXPECTED IMPACT	1008
	A. Design Choices	1008
	B. Expected Impact	1010
VII.	CONCLUSION	1014

I. INTRODUCTION

The past two decades have seen unprecedented growth in patenting in the United States and the rest of the world, coupled with increased interest on the part of many firms in acquiring, using, and enforcing patents. At the

© 2004 Bronwyn H. Hall and Dietmar Harhoff

[†] Department of Economics, University of California at Berkeley and NBER. Professor Hall can be contacted at bhall@econ.berkeley.edu.

[‡] Institute for Innovation Research, Technology Management and Entrepreneurship, University of Munich and CEPR. Professor Harhoff can be contacted at harhoff@bwl.uni-muenchen.de.

same time, the types of subject matter that may be patented have expanded, both through invention and through a series of court decisions. Not surprisingly, these changes have led to tensions in the system, some of which have manifested themselves in increased litigation and some in a decline in the average quality of patents issued. Several governmental and quasi-governmental bodies have called for reforms of various types. One measure that has received considerable support is the strengthening of the current *inter partes* reexamination system into a full post-grant open review system that would have features in common with the European Patent Office (EPO) opposition system.

This Article explores this policy option more thoroughly. In Part II, we define patent quality and discuss the welfare implications of having too many low quality patents, while in Part III, we provide evidence that standards have fallen with some of the patents issued under the current system. Next, in Part IV, we present the options for strengthened reexamination or open review systems that have been recommended in recent reports by the U.S. Patent and Trademark Office (USPTO),¹ the Federal Trade Commission (FTC),² and the National Academy of Sciences (NAS).³ Finally, in Parts V and VI, respectively, we review what is known about the functioning and effectiveness of the European opposition system to draw some lessons for the design of a similar system in the United States.⁴

1. USPTO, THE 21ST CENTURY STRATEGIC PLAN (Feb. 3, 2003) [hereinafter USPTO PLAN], at http://www.uspto.gov/web/offices/com/strat21/stratplan_03feb2003.pdf.

2. FED'L TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (2003) [hereinafter FTC REPORT], at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

3. NAT'L ACAD. OF SCI., A PATENT SYSTEM FOR THE 21ST CENTURY (Stephen A. Merrill et al. eds., forthcoming 2004) [hereinafter NAS STUDY], available at <http://www.nap.edu/books/0309089107/html>.

4. In writing this Article, we have drawn heavily on our joint work with Stuart Graham and David Mowery. See Stuart J.H. Graham et al., *Patent Quality Control: A Comparison of U.S. Patent Reexaminations and European Patent Oppositions*, in PATENTS IN THE KNOWLEDGE-BASED ECONOMY 74 (Wesley M. Cohen & Stephen A. Merrill eds., 2003); Bronwyn H. Hall et al., *Prospects for Improving U.S. Patent Quality via Postgrant Opposition*, in INNOVATION POLICY AND THE ECONOMY 4, 115 (Adam B. Jaffe et al. eds., 2004). We are extremely grateful to them for their contributions. We also appreciate comments by Richard Nelson who encouraged us to define the term "patent quality" in more detail than in previous work.

II. “PATENT QUALITY”⁵

A. Defining “Patent Quality”

Before discussing some of the problems that have emerged recently, it is useful to define what we mean in this Article by the term “patent quality,” a concept that is subject to multiple interpretations. The statutory definition of a patentable invention is that it be novel, nonobvious, and useful.⁶ Economists define a desirable patent as one that covers an invention that would not otherwise be made or one that ensures that a good idea is commercialized by providing a temporary monopoly to the patent holder. Both the economic and legal views suggest that high quality patents describe inventions that are truly new, rather than inventions that are already in widespread use but not yet patented.⁷ Achieving this goal requires that examiners have low-cost access to searchable information about the state of the prior art in a particular technological area.

Besides these three legal requirements, a fourth statutory criterion for granting a patent on an invention is that the patent application must disclose sufficient details about the invention.⁸ These disclosures in the published patent facilitate knowledge spillovers to others who might use or improve upon the invention. Therefore, a high quality patent must enable those “skilled in the art” to comprehend the invention well enough to use the patent document to implement the described invention.⁹ Satisfying this criterion also helps to achieve the first three requirements, since it facilitates the search portion of the examination process.

Finally, from a social welfare perspective, a high quality patent should have little uncertainty over its validity and the breadth of its claims. The specific features of the claimed technical advance should be clearly defined, and the claims should be likely to be upheld in subsequent legal proceedings. Uncertainty about the validity and breadth of a patent has several potential costs: such uncertainty may cause the patent holder to under-invest in the technology, reduce investment by potential competitors in competing technical advances, and lead to costly litigation after both the patent holder and potential competitors have sunk sizable investments.

5. Parts of this section of the paper are drawn from Hall et al., *supra* note 4, and Bronwyn H. Hall, Business Method Patents, Innovation, and Policy (Apr. 2003), at <http://www.frbatlanta.org/news/conferen/fm2003/hall.pdf>.

6. 35 U.S.C. §§ 101-103 (2000).

7. Presumably, if the invention has already been reduced to practice by others, the potential gain from offering an inventor incentive to invent is zero, leaving only the deadweight loss from monopoly.

8. 35 U.S.C. § 112.

9. *Id.* § 112.

Some uncertainty over validity and breadth is inevitable, but resolving it sooner rather than later is a desirable feature of any patent system.

Our notion of patent quality refers both to the standard, set by the law and the courts, against which patent applications are being evaluated and to the less than perfect handling of the examination process. The first idea describes the degree to which the patent standard deviates from that which would maximize economic welfare, while the second idea describes the way in which the standard is applied, which is inevitably at times at variance with the intent of the law. Both ideas measure deviations from a welfare-maximizing delineation of patents. In that sense, the ideas both imply low patent quality.

B. Consequences of Low Patent Quality

Although Lemley has argued that the costs of having higher quality patents may exceed the benefits,¹⁰ recent experience suggests that the issuance of low quality patents has unintended negative consequences in the form of increasing complexity of using the patent system and of feedback effects on the behavior of potential applicants. In this Section, we review these arguments, which include entry deterrence of would-be innovators, a slower pace of innovation, and increases in patent application activity that are costly both to the firms and to society.

Low quality patents can create considerable uncertainty among inventors or would-be commercializers of inventions, which in turn can slow either the pace of innovation or investment in the commercialization of new technologies. Lerner has shown that fear of litigation may cause smaller entrant firms to avoid areas where incumbents hold large numbers of patents.¹¹ Testimony from the biotechnology community to the 2002 Federal Trade Commission-Department of Justice hearings on innovation and competition policy confirms this view.¹² Such entry-avoidance may be rational and even welfare-enhancing if the incumbents' patents are known for certain to be valid, but low quality patents held by incumbents may also deter entry into a technological area if the cost of invalidating the patents is too high. In these circumstances, technological alternatives may not be commercialized and consumer welfare suffers.

10. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW U. L. REV. 1495 (2001).

11. Josh Lerner, *Patenting in the Shadow of Competitors*, 38 J.L. & ECON. 463 (1995).

12. FED'L TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY, EXECUTIVE SUMMARY 5 n.17 (2003) [hereinafter FTC EXECUTIVE SUMMARY], at <http://www.ftc.gov/opa/2003/10/cpreport.htm>, reprinted in 19 BERKELEY TECH L.J. 861, 865 (2004).

On the incumbent side, problems may also arise if a proliferation of patents with dubious validity or uncertain breadth are granted because incumbents with sunk investments, especially investments involving technological standards, are highly vulnerable to hold-up or patent predation by firms who have not sunk investments. The assertion of patents by non-producers against established firms may be valid in some cases. But resolution of the non-producer's claims is clearly more costly when the validity and breadth of the asserted patent can only be determined via expensive litigation. In that instance, paying licensing fees may be cheaper than going to court, even if the patent in question is viewed as low quality by the accused infringer. Such patent predation is of particular concern to large firms in the information and communication technologies ("ICT") and semiconductor industries.¹³

The lack of rapid processes for resolving patent validity and ensuring higher patent quality also may slow the pace of invention in fields characterized by cumulative invention, in which one inventor's efforts rely on previous technical advances or advances in complementary technologies.¹⁴ If these previous technical advances are covered by patents of dubious validity or uncertain breadth, the costs to inventors of pursuing the inventions that rely on them may be so high as to discourage such cumulative invention.¹⁵ Alternatively, large numbers of low quality patents may dramatically increase the level of fragmentation of property rights covering prior-generation or complementary technologies, raising the transaction costs for inventors to license these technologies.¹⁶ Finally, the issue of a large number of low quality patents will increase uncertainty among inventors concerning the level of protection enjoyed by these related inventions, which in turn will make it more costly and difficult for inventors to build on these related inventions in their own technical advances.¹⁷

The issuance of low quality patents is also likely to spur significant increases in patent applications, further straining the already overburdened examination processes of the USPTO. A vicious circle may result, in which cursory examinations of patent applications result in the issue of

13. FTC REPORT, *supra* note 2, ch. 3, § IV ("The Computer Hardware Industries, Including Semiconductors"); *id.* § V ("The Software and Internet Industries"); Bronwyn H. Hall & Rosemarie Ham Ziedonis, *The Patent Paradox Revisited: An Empirical Study of Patenting in the U.S. Semiconductor Industry, 1979-1995*, 32 RAND J. ECON. 101 (2001).

14. See FTC REPORT, *supra* note 2, ch. 2 (discussing the effects of patents on "stand-alone" innovation and "follow-on" innovation).

15. *Id.* at 21.

16. *Id.* at 27.

17. *Id.* at 3, 28.

low quality patents, which triggers rapid growth in applications, further taxing the limited resources of the USPTO, further limiting the examination of individual applications, and further degrading the quality of patents. Anecdotal and statistical evidence suggests that increases in patenting in information and communication technologies have been driven by this process. Hall shows that although the growth in U.S. patenting since 1985 has been spread throughout different technology classes, it is largely accounted for by the growth in patenting by U.S. corporations in the computing and electronics sector of the economy.¹⁸ One does not have to look far for the reason: Ziedonis and Hall describe the conscious accumulation of patents in the semiconductor industry solely for the purposes of the cross-licensing negotiations that are necessary in a complex products industry.¹⁹ A number of participants in the broader ICT sector have confirmed that this motive is behind the increase in patenting in this sector and indicated that they view most of this activity simply as a cost of doing business rather than as a benefit for their firms.²⁰

Lemley's argument would lead one to believe that a registration system with fast and inexpensive court proceedings available for resolving the inevitable conflicts would be the best patent system.²¹ Given the above arguments, we do not follow that conclusion. We argue that a mixture of reasonably thorough examination using a high standard of patentability combined with a post-grant review mechanism and subsequent court proceedings will work best to sustain strong innovation incentives. However, neither our preferred design nor Lemley's alternative is available in the United States at this point. We study some of the problems of the U.S. patent system in the next part.

18. Bronwyn H. Hall, Exploring the Patent Explosion (Mar. 14, 2003), at <http://emlab.berkeley.edu/users/bhhall/papers/BHH%20Mannheim03.pdf>.

19. Rosemarie Ham Ziedonis & Bronwyn H. Hall, *The Effects of Strengthening Patent Rights on Firms Engaged in Cumulative Innovation: Insights from the Semiconductor Industry*, in ENTREPRENEURIAL INPUTS AND OUTCOMES: NEW STUDIES OF ENTREPRENEURSHIP IN THE UNITED STATES 133 (Gary D. Libecap ed., 2001). For additional evidence that the computing manufacturing sector including semiconductors is the force behind the increase in software patenting, rather than the software sector itself, see JAMES BESSEN & ROBERT M. HUNT, AN EMPIRICAL LOOK AT SOFTWARE PATENTS (Fed. Reserve Bank of Philadelphia, Working Paper No. 03-17/R, 2004).

20. FTC EXECUTIVE SUMMARY, *supra* note 12, at 6-7, reprinted in 19 BERKELEY TECH L.J. 861, 866-67 (2004).

21. See Lemley, *supra* note 10.

III. PROBLEMS IN THE U.S. PATENT SYSTEM

In this Part, we review some of the problems that have recently been identified in the operation of the U.S. patent system. These problems include a rapid and sustained increase in patent applications, which led to a greater workload for each examiner in spite of efforts to increase the examination corps. Because there are more patents, there has also been an increase in patent litigation, both in absolute numbers of suits and in the rate per patent. Finally, criticisms that the patentability standard has declined are supported by evidence based on European patent examination.

Since the mid-1980s, utility patent applications to the USPTO have grown at an average rate of five percent per year, rising from approximately 100,000 per year from 1970 through 1984, to about 330,000 per year in 2001.²² Obviously, this increase has led to an increase in patent office workload, especially since resources at the patent office have not kept pace.²³ Patent pendency has risen from an average of eighteen months in 1990 to twenty-four months in 2002.²⁴ There is evidence that patent grant rates have also risen, suggesting that time pressures have led to less scrutiny of each individual application.²⁵ These are signs of a system un-

22. Authors' computation from USPTO data at USPTO, *U.S. Patent Statistics, Calendar Years 1963-2001*, at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf (last visited Aug. 10, 2004).

23. During the past five years, the number of applications filed per annum and per examiner has risen from 90 to 110, according to authors' computations from USPTO Annual Reports. See USPTO, ANNUAL REPORT (1999), at <http://www.uspto.gov/web/offices/com/annual>; USPTO, PERFORMANCE AND ACCOUNTABILITY REPORT (2003), at <http://www.uspto.gov/web/offices/com/annual>. Since about 1984, the length and complexity of patent applications has also been increasing, so that the number of claims filed per examiner has gone up even faster, according to data compiled from the NBER patent database. See NAT'L BUREAU OF ECON. RESEARCH, U.S. PATENT CITATIONS DATA FILE (2003), at <http://www.nber.org/patents>; see also BRONWYN H. HALL ET AL., THE NBER PATENT CITATIONS DATA FILE: LESSONS, INSIGHTS AND METHODOLOGICAL TOOLS 23-24 (Nat'l Bureau of Econ. Research, Working Paper No. 8498, 2001), at <http://papers.nber.org/papers/w8498.pdf>; John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. REV. 77, 103 (2002).

24. Authors' computations from the NBER patent database. See NAT'L BUREAU OF ECON. RESEARCH, *supra* note 23.

25. Because of the existence of continuations and divisionals, the computation of the share of patent applications that are ultimately granted is somewhat difficult and subject to debate. For detailed information on this topic, see Robert A. Clarke, *U.S. Continuity Law and its Impact on the Comparative Patenting Rates of the U.S., Japan and the European Patent Office*, 85 J. PAT. & TRADEMARK OFF. SOC'Y 335 (2003); Cecil D. Quillen, Jr. et al., *Continuing Patent Applications and Performance of the U.S. Patent and Trademark Office—Extended*, 12 FED. CIR. B.J. 35 (2002). Using numbers based simply on raw USPTO data on granted patents and their reported application dates, the grant rate has

der stress. James Rogan, the former Director of the USPTO, recently stated, "This is an agency in crisis, and it's going to get worse if we don't change our dynamic. It doesn't do me any good to pretend there's not a problem when there is."²⁶

At the same time, patent litigation has increased, as have patent litigation rates. In a study of patent litigation between 1978 and 1995, Lanjouw and Schankerman found that the rate of litigation rose only slightly between the 1978-84 and the 1991-95 periods, from nineteen suits per thousand patents in the first period to twenty-one suits per thousand patents in the second, with some variation across technology areas.²⁷ Somaya suggests that this rate rose again in the late 1990s.²⁸ In a new and comprehensive study of patent litigation focusing on cases that terminated in 1998-2000, Allison et al. reported a litigation rate of approximately thirty-two suits per thousand patents.²⁹ Whether or not litigation per patent issued has increased substantially, the absolute amount of litigation has grown, increasing both the private and public costs of the system as a whole. This increase in litigation suggests that the number of valuable patents is increasing and that there is greater uncertainty about their validity.

It is therefore not surprising that a number of experts have suggested that the U.S. patent examination system does not currently impose a sufficiently rigorous review of patent and non-patent prior art, resulting in the issuing of patents of excessive breadth and insufficient quality, and that this problem has worsened in recent years. There is some consensus among legal scholars and other researchers that the average standard being applied during the past decade is too low,³⁰ especially in newer technology

risen since 1995 from about 62% for patents applied for in 1993 to around 78% for patents applied for in 1998. See NAT'L BUREAU OF ECON. RESEARCH, *supra* note 23. Both rates underestimate the true grant rate once continuations and divisionals have been accounted.

26. David Streitfeld, *Note: This Headline is Patented*, L.A. TIMES, Feb. 7, 2003, at 1.

27. JEAN O. LANJOUW & MARK SCHANKERMAN, ENFORCING INTELLECTUAL PROPERTY RIGHTS 30 tbl.2 (London Sch. of Econ. & Political Sci. Toyota Ctr., Working Paper No. EI/30, 2001), at <http://sticerd.lse.ac.uk/dps/ei/ei30.pdf>.

28. Deepak Somaya, Patent Strategy Viewed Through the Lens of Patent Litigation 107-08, 140 fig.1 (2002) (unpublished Ph.D. dissertation, University of California, Berkeley) (on file with the University of California, Berkeley Library).

29. John R. Allison et al., *Valuable Patents* app. at 57 fig.1 (2003), at <http://papers.ssrn.com/abstract=426020>.

30. For a critique of the standard in general, see John H. Barton, *Non-obviousness*, 43 IDEA 475 (2003); John H. Barton, *Reforming the Patent System*, 287 SCIENCE 1933 (2000); Mark D. Janis, *Rethinking Reexamination: Toward a Viable Administrative Revocation System for U.S. Patent Law*, 11 HARV. J.L. & TECH. 1 (1997); William King-

areas like software and business methods.³¹ Quantitative evidence that the problem of lowered standards affects the system as a whole rather than simply these relatively small (in terms of patenting) new technological areas has been more difficult to find, but we can offer two pieces of suggestive evidence based on comparisons with the European Patent System.

The first is to compare the EPO experience of patents originating from the United States versus patents originating from other parts of the world. Our proxy for the patent's origin is the priority-date country named in the patent. Most U.S. origin patent filings have a U.S. priority date and most non-U.S. filings have a non-U.S. priority date. Figure 1 shows the result: the difference in grant rates for patent applications from the two jurisdictions has risen from 0% to about 16% during the past twenty years, in spite of the fact that U.S. priority patents represent only those U.S. inventions thought to be valuable enough to be worth patent protection in a foreign jurisdiction.³² The fact that U.S. priority applications are now less likely to receive patent protection suggests a decline in the standard of U.S. applications. We have verified that the difference in grant rates is not due to differences in subject matter coverage, such as software and business methods, which are generally patentable in the United States, but not in Europe. Although slightly higher in electrical, chemical, and construction technologies, the differences exist in all technologies.

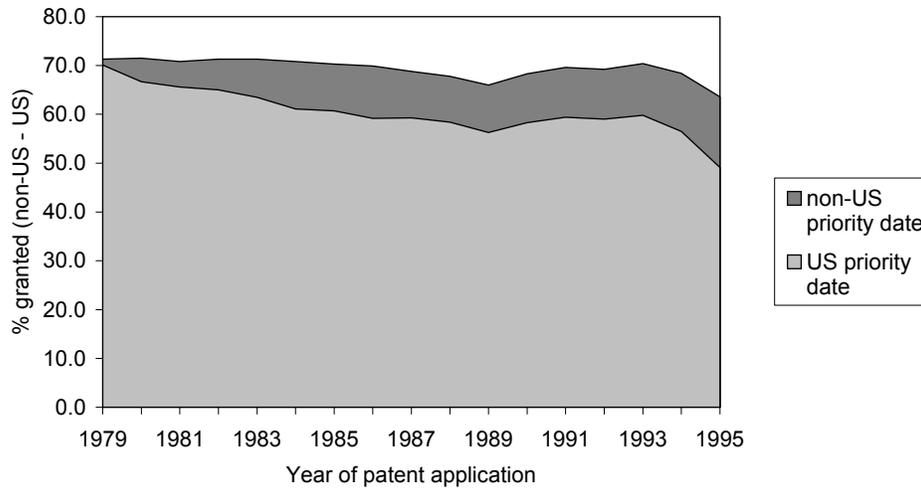
ston, *Innovation Needs Patents Reform*, 30 RES. POL'Y 403 (2001); Cecil D. Quillen, Jr., *The U.S. Patent System: Is It Broke? And Who Can Fix It If It Is?*, Address at the Spring Meeting of the Association of General Counsel (May 11, 2001), at <http://www.ftc.gov/os/comments/intelpropertycomments/quillenattachments/isitbrokewhocanfixit.pdf>.

31. On software and business method patents, see JOHN KASDAN, *FASCINATION ALGORITHM: PATENT PROTECTION FOR COMPUTER PROGRAMS* (Columbia Law Sch. Ctr. for Law and Econ. Studies, Working Paper No. 94, 1994), at http://www.law.columbia.edu/center_program/law_economics/wp_listing_1/wp_author#83129; Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?*, 16 SANTA CLARA COMPUTER & HIGH TECH. L.J. 263 (2000); Glynn S. Lunney, Jr., *E-Obviousness*, 7 MICH. TELECOMM. & TECH. L. REV. 363 (2001); Michael J. Meurer, *Business Method Patents and Patent Floods*, 8 WASH. U. J.L. & POL'Y 309 (2002).

32. Authors' own computations based on data from the EPO's website at <http://www.epoline.org>. To compute the results referenced here and in the remainder of the Article, we used a complete list of EPO applications numbers supplied by the EPO and extracted procedural data on all EPO patent applications filed between the inception of the EPO and Dec. 31, 2002, from the EPOLINE database. The data allow us to consider the timing of applications and grants by major technical fields. Furthermore, we can identify all opposition and appeal cases and their outcomes from this source, again by technical field.

Figure 1

Difference in Grant Probabilities at the EPO
for US and non-US Priority Patents
All Technologies



The second piece of evidence is drawn from a recent Organisation for Economic Co-Operation and Development (OECD) study that compares the grant rates for U.S. priority patent equivalents at the EPO and the USPTO.³³ Equivalents are filings on the same invention in different patent offices. In this case the inventor, who may or may not be U.S. based, has filed for protection in both Europe and the United States. He may or may not be successful in both places, depending on the standards of patentability applied. The OECD study shows that the difference in grant rates for equivalent filings at the two patent offices has grown from 18% to 40% during the past twenty years, again suggesting a decline in the standards being applied at the USPTO or an increase in the standards applied at the EPO.³⁴

What are the causes of the apparent decline in scrutiny indicated by these numbers? We have already suggested that rapid increases in patent applications have overburdened the USPTO. The patent office has introduced a number of changes intended to help the situation. For example, between 1997 and 2000, the number of examiners in class 705, the class to which many business method patents are assigned, approximately quadru-

33. ORG. FOR ECON. CO-OPERATION & DEV., PATENTS AND INNOVATION: TRENDS AND POLICY CHALLENGES (2004), at <http://www.oecd.org/dataoecd/48/12/24508541.pdf>.

34. *Id.* at 19 fig.7.

pled, and the number with advanced training in business also increased.³⁵ A program of improving prior art availability in this area was undertaken.³⁶ In 2001, a “second pair of eyes” was introduced for patents in class 705³⁷ and the grant rate in that class fell as a result. It is now only 17%.³⁸ The USPTO counts this program a success and has recommended that it be used in other technological areas.³⁹

A recent decision by the Court of Appeals for the Federal Circuit creates still another reason for serious consideration of a nonjudicial process for post-issue validity challenges. In 2002, the Federal Circuit ruled that the USPTO had incorrectly rejected an application for obviousness, arguing that if an examiner rejects an application using “general knowledge,” that knowledge “must be articulated and placed on the record.”⁴⁰ According to deputy commissioner Esther Kepplinger, this ruling means, “we can’t reject something just because it’s stupid.”⁴¹ The Federal Circuit’s decision could significantly weaken the level of scrutiny provided by the already costly and overcrowded patent-examination system. A system that enabled third parties, including competitors, to bring such knowledge in the form of written prior art to bear on the patent could help in making an obviousness or novelty determination. This idea is discussed further in the next part of this Article.

35. USPTO, AUTOMATED FINANCIAL OR MANAGEMENT DATA PROCESSING METHODS (BUSINESS METHODS) 8, 10 (2000), at <http://www.uspto.gov/web/menu/busmethp/whitepaper.pdf>.

36. *Id.* at 11.

37. Commissioner for Patents Nicholas Godici, Remarks at the Patent Public Advisory Committee Meeting 21-22 (Aug. 23, 2000), at <http://www.uspto.gov/web/offices/com/advisory/notices/ppacmeet0008.html>.

38. *Edited & Excerpted Transcript of the Symposium on Ideas into Action: Implementing Reform of the Patent System*, 19 BERKELEY TECH. L.J. 1053, 1069 (2004) (remarks by Q. Todd Dickinson, General Electric (former Director, U.S. Patent & Trademark Office)).

39. USPTO PLAN, *supra* note 1, at 9.

40. *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002). This decision presumably makes it more difficult to reject such patents as U.S. Patent No. 6,368,227 (issued Apr. 9, 2002), the patent on a swinging method that uses a technique known by children for years, but not placed “on the record.” This particular patent has been subject to a reexamination request of the U.S. Patent Commissioner, probably because of the publicity it received. NAS STUDY, *supra* note 3, at 39. The problem with patents like U.S. Patent No. 6,368,227 is not necessarily that they are enforceable in the courts, but that they clog the system and raise its total cost.

41. Streitfeld, *supra* note 26.

IV. REFORM PROPOSALS AND THE PROMISE OF POST-GRANT REVIEW MECHANISMS

Not surprisingly, the increase in the USPTO's workload, the increase in litigation, and the decrease in patent quality have not gone unnoticed in the business and policy communities. Three organizations have instituted studies of the operation of the patent system and produced a set of recommendations. These studies are the USPTO's proposed *21st Century Strategic Plan*,⁴² a FTC Report that focuses on the competition policy-innovation policy nexus,⁴³ and a study by the NAS in which one of the authors of this Article participated.⁴⁴ We review these proposals here and conclude that they have the potential to move U.S. post-grant patent review closer to the European patent opposition system, whose performance we then take a closer look at in the subsequent part of the Article.

The USPTO has proposed a proceeding "that would allow the public to petition the USPTO to cancel one or more claims in a patent within one year of its issue date. And it allows anyone who is threatened with a patent infringement suit to petition for review within four months of being threatened."⁴⁵ The proposal envisions a streamlined proceeding conducted by Administrative Patent Judges of the Board of Patent Appeals and Interferences and "designed to be concluded within a year, in which direct cases could be presented by documents, and live cross-examination allowed where necessary."⁴⁶ As a consequence, the USPTO proposes eliminating the *inter partes* reexamination to "alleviate the burden on the examiners of having to examine complex and lengthy reexamination proceedings, and thus free examiners to examine applications and reduce pendency."⁴⁷ In the proposed proceeding, the third party would develop and present the evidence, which would save resources that the USPTO currently expends to determine patentability. The merit of this proposal is that it comes from the USPTO and therefore presumably reflects the realities of the resource constraints the agency faces.

The FTC Report makes a similar recommendation for the creation of "a new administrative procedure to allow post-grant review of and opposi-

42. USPTO PLAN, *supra* note 1.

43. FTC REPORT, *supra* note 2.

44. NAS STUDY, *supra* note 3.

45. USPTO, POST-GRANT REVIEW OF PATENT CLAIMS, at <http://www.PTO.gov/web/offices/com/strat21/action/sr2.htm> (last visited July 16, 2004).

46. *Id.*

47. *Id.*

tion to patents.”⁴⁸ The Report recommends that challengers “be able to raise issues of novelty, nonobviousness, written description, enablement, and utility.”⁴⁹ The FTC Report also recommends that the process be presided over by an administrative patent judge and that discovery be carefully circumscribed.⁵⁰ The USPTO’s conclusions would receive deference in the appellate court; such a feature may help to reduce the uncertainty over the validity of a patent by resolving the question sooner.⁵¹

The NAS Study recommends both that the nonobviousness standard be reinvigorated and that an open review proceeding of the type contemplated by the USPTO be instituted. With respect to the first recommendation, the Study comments particularly on business methods, “where the common general knowledge of practitioners is not fully described in published literature likely to be consulted by patent examiners, [consequently] another method of determining the state of knowledge needs to be employed,”⁵² and on gene sequence patents where “a Federal Circuit ruling [holds] that with this technology obviousness is not relevant to patentability.”⁵³ An open review proceeding would help to avoid such problems in the future by allowing prior art to be brought forward by those most knowledgeable about the area—the competitors of the patent holder—and by giving deference to the USPTO in determining questions of patentability.

With respect to open review itself, the NAS Study recommends that Congress pass legislation “creating a procedure for third parties to challenge patents after their issuance in a proceeding before administrative patent judges of the USPTO.”⁵⁴ Like the FTC, the NAS wants the grounds for a challenge to be “any of the statutory standards—novelty, utility, nonobviousness, disclosure, or enablement.”⁵⁵ The NAS Study also anticipates that federal district courts would be able to refer validity questions to an open review proceeding within the USPTO, leaving them free to concentrate on the infringement part of the case.⁵⁶ This reform would have the added benefit of more rapid feedback of information, such as the existence of prior art, from opposition or litigation to the prosecution of patents within the USPTO itself.

48. FTC EXECUTIVE SUMMARY, *supra* note 12, at 7, reprinted in 19 BERKELEY TECH L.J. 861, 869 (2004).

49. *Id.* at 8 n.26, reprinted in 19 BERKELEY TECH L.J. 861, 870 n.26 (2004).

50. *Id.* at 8, reprinted in 19 BERKELEY TECH L.J. 861, 870 (2004).

51. *Id.*

52. NAS STUDY, *supra* note 3, at 5.

53. *Id.* (referring to *In re Bell*, 991 F.2d 781 (Fed. Cir. 1993)).

54. *Id.*

55. *Id.*

56. *Id.*

Summing up, all these proposals both broaden the number of issues than can be raised and increase the ability of the requestor to engage with the patent holder and the USPTO. In these respects, the open review systems contemplated by these proposals resemble the opposition system that currently exists at the EPO. Therefore, in the next part, we look at the experience with the European system and what it might tell us about the design parameters for a similar system in the United States.

V. A LOOK AT THE EUROPEAN EXPERIENCE

The opposition and appeal institutions at the EPO provide us with an interesting laboratory for analyzing the workings of a particular post-grant system. The legal framework governing application, examination, and opposition processes at the EPO is the European Patent Convention (EPC). Part V of the EPC (Articles 99 to 105) provides the foundations for the opposition procedure,⁵⁷ Part VI (Articles 106 to 112) describes the appeal process.⁵⁸ Any third party may file an opposition against the patent grant within nine months after the grant of a patent by the EPO.⁵⁹ The decision regarding the opposition has force in all designated EPC countries and the opponent is involved in the proceedings as an *inter partes* participant.⁶⁰ The European scope of an opposition's effect and the participation of the opponent as an adversary make the European opposition mechanism quite attractive for any potential challenger. Article 100 lists the admissible reasons for an opposition: 1) that the subject matter is not patentable because the EPO's three examination criteria of novelty, inventive step, and commercial applicability have not been met; 2) that disclosure of the invention is not sufficient to enable somebody skilled in the art to practice the invention; or 3) that the scope of the patent as granted exceeds the scope of the original patent application.⁶¹ The opposition proceeding has three potential outcomes: the patent may be revoked, the opposition may be rejected, or the patent may be narrowed.⁶² In the third case, a modified patent grant will be published by the EPO. The costs of opposition and appeal are born by each party; however, the Opposition Division may deviate from this

57. Convention on the Grant of European Patents, Oct. 5, 1973, arts. 99-112 [hereinafter EPC], at <http://www.european-patent-office.org/legal/epc>.

58. *Id.* arts. 106-12. Part VI of the EPC deals with appeals at the EPO in general, i.e., with appeals against the examiner's decision to refuse a patent grant and any other decision, such as the ruling of the opposition boards.

59. *Id.* art. 99.

60. *Id.* art. 99.

61. *Id.* art. 100.

62. *Id.* art. 102.

cost allocation if it wishes to do so.⁶³ This option to assign costs is rarely used, so that typically, the costs are born by each of the parties themselves.⁶⁴

The Opposition Division responsible for hearing the opposition case consists of three technical examiners, at least two of whom have not taken part in the examination.⁶⁵ The respective patent examiner may not be the chairman of the division. The Opposition Division may conduct oral proceedings, and the proceedings can be enlarged, if necessary, by a legally qualified examiner who has not taken part in the proceedings for grant of the patent. Additional procedural details are described in the Implementing Regulations to the Convention on the Grant of European Patents which accompanies the European Patent Convention.⁶⁶ Notably, the settlement options between the opponent and the patent holder are seriously restricted once the opposition case has been filed. The EPO may pursue an opposition case of its own motion if the opposition has been withdrawn by the opponent or if the opponent has been legally incapacitated.⁶⁷

We now turn to our empirical data on opposition.⁶⁸ In Table 1, we document the frequency of opposition for all patent grants occurring between 1980 and 1995.⁶⁹ A total of 7.9% of all patents granted between 1980 and 1995 were opposed, and roughly one third of these opposition cases were then appealed. The median duration is about 1.9 years for opposition⁷⁰ and 2.1 years for appeal cases. Getting to legal certainty for patents filed at the EPO is therefore a lengthy process: the average duration

63. *Id.* art. 104.

64. An exact assessment of the number of cases in which the actual cost allocation deviates from the rule laid down in Article 104(1) is difficult because the EPO does not publish statistics on cost allocation in opposition proceedings. For the decisions of the Boards of Appeal, an estimate of how frequently cost allocation is an issue can be derived from a search of the Boards of Appeal decisions published at http://legal.european-patent-office.org/dg3/search_dg3.htm. Article 104 is mentioned only in 209 out of 18,148 appeals cases (date of search: Aug. 4, 2004). This result confirms our subjective assessment that a cost allocation deviating from Article 104(1) is a rare event.

65. EPC, *supra* note 57, art. 19(2).

66. Implementing Regulations to the Convention on the Grant of European Patents, Oct. 5, 1973 [hereinafter EPC Implementing Regulations], at <http://www.european-patent-office.org/legal/epc>.

67. *Id.* R.60(2).

68. See *supra* note 32 for details on the data source used to compute the results summarized in Table 1 and Table 2.

69. The nine month period during which opposition can be filed is not included in the duration of opposition. The incidence of appeal is computed as a share of all opposed patents.

70. Again, this duration does not include the nine-month opposition period.

of examination is 4.3 years,⁷¹ and for contested patents, another 4.0 years are needed to sort out the opposition and appeal cases. Across technology areas, there is little variation in opposition and appeal rates; moreover, the median durations do not vary strongly, with the exception of cases involving chemistry patents for which the appeal stage takes somewhat longer (2.6 years at the median) than in other technology areas.

Table 1
Frequency and Duration of EPO Opposition and Appeal Proceedings
by Technical Area (Grant Years 1980-1995)

Main Technical Area	Incidence of Opposition	Median Duration of Opposition	Incidence of Appeals	Median Duration of Appeal
Electrical Engineering	5.3%	2.1 yrs	27.0%	1.8 yrs
Instruments	7.1%	2.0 yrs	34.7%	1.9 yrs
Chemistry	9.1%	2.1 yrs	32.3%	2.6 yrs
Process Engineering	9.7%	1.7 yrs	32.5%	2.3 yrs
Mechanical Engineering	7.7%	1.7 yrs	30.5%	1.9 yrs
Consumption and Construction	7.2%	1.7 yrs	32.3%	2.0 yrs
Total	7.9%	1.9 yrs	31.7%	2.1 yrs

The opposition and appeal mechanism would not be remarkable if it did not overturn a significant percentage of the preceding examination decisions. The outcome distribution is tabulated in Table 2,⁷² again by main technological area. We document here the final outcome after a possible appeal proceeding. Roughly one-third of the patents (34.7%) are revoked, and roughly another third (32.7%) are maintained in amended form with narrowed breadth. Only 27.4% of all cases lead to a rejection of the opposition. These results indicate that the EPO opposition mechanism corrects a large number of errors from earlier examination decisions.

71. See Dietmar Harhoff & Stefan Wagner, Modeling the Duration of Patent Examination at the European Patent Office 11 (Nov. 12, 2003), at http://www.vwl.uni-mannheim.de/stahl/io_ausschuss/paper/04_harhoff.pdf.

72. The category "opposition closed" refers to cases in which either the patent holder lets the patent lapse by not paying renewal fees or the opponent drops his opposition against the grant and the EPO does not pursue the case on its own behalf.

Table 2
Outcomes of Opposition and Appeal Proceedings by Technical Area
(Grant Years 1980-1990)

Main Technical Area	Patent Revoked	Opposition Rejected	Patent Amended	Opposition Closed
Electrical Engineering	37.8%	27.4%	30.7%	4.1%
Instruments	34.8%	27.9%	32.2%	5.1%
Chemistry	36.1%	24.5%	35.2%	4.2%
Process Engineering	33.5%	28.3%	30.8%	7.4%
Mechanical Engineering	32.4%	30.3%	32.3%	5.1%
Consumption and Construction	31.0%	30.4%	31.0%	7.7%
Total	34.7%	27.4%	32.7%	5.3%

In 5.3% of all oppositions, the case was closed without yielding any of the three outcomes discussed so far. Closure can result from withdrawal of the opposition by the opponent or from the patent holder letting the patent lapse by not paying the renewal fees. Hence, this outcome reflects both cases that were successful from the attacker's point of view, in which the patent lapsed into the public domain, and cases that were successes for the patent holder, in which the opposition was dropped. Informal agreements between opponent and patent holder also are captured by this classification. But this implicit settlement rate is far below the settlement rate of over 90% percent in U.S. patent litigation cases.⁷³

Another major difference between EPO oppositions and U.S. patent litigation concerns the costs. While there are no official statistics that capture the costs of oppositions in a representative manner, several practitioners have stated cost estimates in public. According to these estimates, the average cost per instance and per side is often less than \$20,000, but depends on the complexity of the case.⁷⁴ For our welfare discussion later, it

73. LANJOUW & SCHANKERMAN, *supra* note 27, at 33 tbl.5.

74. Mewburn Ellis L.L.P. give ranges between \$5,000 and \$15,000 to prepare and file a Notice of Opposition for standard cases, and between \$8,000 and \$30,000 for the subsequent correspondence and oral proceeding. Mewburn Ellis L.L.P., Oppositions, at <http://www.mewburn.com/meepopf.htm> (last visited July 6, 2004). Markus Herzog of Weickmann & Weickmann, Munich, estimates the cost for each side to be €7,000 for the opposition and €10,000 for the appeal stage if the parties employ patent attorneys at the EPO's location (i.e., without cost of travel). E-mail from Markus Herzog, Partner, Weickmann & Weickmann, to Dietmar Harhoff, Professor of Management, Ludwig-Maximilians-University, Munich (Oct. 17, 2001) (on file with author). He also notes that the parties have virtually no way of driving up their adversary's costs. *Id.*

is important to note that the cost of opposition is considerably lower than the cost of patent litigation in the United States.⁷⁵

The selection of cases for opposition has been addressed in work by Harhoff,⁷⁶ Harhoff and Reitzig,⁷⁷ Graham et al.,⁷⁸ and Hall et al.⁷⁹ The overall results are summarized as follows:

- particularly valuable patents are selected with higher likelihood than less valuable ones;
- patents in fields with technical and market uncertainty are attacked more frequently than patents in more established fields;
- patents with immediate market impact are more likely to be attacked;
- patents of independent inventors are attacked *less*, not more frequently than corporate patent applicants.

The first result confirms that opposition at the EPO has a screening property: particularly valuable patents are more likely to be opposed than low value ones. If we assume that the potential welfare losses due to invalid patents are particularly large in the case of valuable patents, this empirical result is very reassuring. The last result is especially important given that the U.S. independent inventor lobby has voiced concerns that a post-grant mechanism may threaten financially weaker patent holders. The EPO opposition mechanism clearly does not present such a threat.

Ideally, the existence of an opposition system with a high revocation rate will have considerable benefits if the revoked patents would have led to costly litigation in a patent system without a post-grant review. In other words, a working opposition system should reduce the rate of litigation. It is difficult to show this reduction directly for EPC countries, since we do not have access to a suitable experiment. However, a comparison of the German and U.S. systems shows a remarkable difference in litigation ac-

75. Litigation costs for the U.S. are estimated to range between \$0.5 and 4 million per side, without appeal. NAS STUDY, *supra* note 3, at 31; *see also* AM. INTELLECTUAL PROP. LAW ASS'N, REPORT OF ECONOMIC SURVEY 84-85 (2001).

76. Dietmar Harhoff, Incidence, Duration and Outcomes of Opposition and Appeal Cases at the European Patent Office (July 12, 2004), at <http://www.inno-tec.bwl.uni-muenchen.de/forschung/harhoff/index.html>.

77. Dietmar Harhoff & Markus Reitzig, *Determinants of Opposition Against EPO Patent Grants—The Case of Biotechnology and Pharmaceuticals*, 22 INT'L J. INDUS. ORG. 443 (2004).

78. Graham et al., *supra* note 4.

79. Hall et al., *supra* note 4.

tivity. For EPO granted patents in Germany, the patent litigation filing rate can be estimated to be about 0.9%.⁸⁰ This rate compares quite favorably to the overall filing rate of 1.9% in the United States as computed by Lanjouw and Schankerman.⁸¹ The difference between the German and the U.S. litigation rate is all the more remarkable because there are a number of factors that would lead to a relatively high estimate for Germany. For example, the calculation just described only concerns EPO granted patents, which are typically more valuable than patents granted by the German Patent Office and are thus more likely to be attacked. Moreover, litigation in Germany is considerably less expensive than in the United States, and the cases are resolved more quickly.⁸² Hence, the low German filing rates are all the more surprising.

We can employ our data and these estimates to conduct a simple thought-experiment. Suppose that only 20% of the patents revoked in EPO oppositions and appeals would lead to patent infringement litigation in Germany.⁸³ According to Tables 1 and 2, the share of revoked patents among all patents is 2.7%.⁸⁴ Thus, if 20% of the revoked patents would have caused litigation without an opposition system, the German litigation rate would have increased by 0.55%, more than half of its current level of 0.9%. While we cannot show a direct causal impact of opposition on litigation, these calculations, taken together with the remarkably low litigation activity in Germany, support our view that a well-functioning opposition system will create considerable benefits for an economy. Based on this scenario and additional assumptions, we consider the expected impact of a post-grant review system in the following section.

80. Harhoff, *supra* note 76. These computations supersede and correct earlier estimates in Hall et al., *supra* note 4, at 141 n.11.

81. LANJOUW & SCHANKERMAN, *supra* note 27, at 30 tbl.2.

82. See Klaus-Jürgen Michaeli, *Patent Litigation in Germany*, in BUTTERWORTHS PATENT LITIGATION: ENFORCING A GLOBAL PATENT PORTFOLIO 79 (Gary M. Ropski ed., 1995). Michaeli gives a range of \$100,000 to \$320,000 for patent litigation costs in Germany in 1995. *Id.* at 86. If a case goes through all instances, it may last between three and five years. *Id.* at 85. The first instance typically takes less than two years, and frequently as little as seven to nine months. *Id.* at 81-84, 86.

83. Of all EPO patent grants, 97.88% designate Germany. EUROPEAN PATENT OFFICE, ANNUAL REPORT 86 tbl.7.4 (2003), at <http://annual-report.european-patent-office.org/2003>. Thus, in first approximation we can work with the grant and opposition estimates displayed in Table 1, *supra* page 1004, although these refer to the population of all EPO patent grants.

84. Calculated by multiplying the total incidence of opposition (7.9%) by the percentage of patents revoked (34.7%).

VI. KEY DESIGN CHOICES AND EXPECTED IMPACT

A. Design Choices

The design of a post-grant review mechanism is by no means an easy task. A number of key design parameters have to be set appropriately, and the underlying economic structure has to be well-understood by policy-makers. Misjudging the motivation of the parties and the impact of costs and of institutional settings could render the institution nonfunctional. The design of the USPTO reexamination system is a telling example. Graham et al. argue that the decision to make reexamination an *ex parte* institution has weakened this mechanism because of the lack of involvement of the challenger.⁸⁵ In this section we consider a few crucial design parameters: the time limits on opposition; the role of settlements; the parties allowed to file a review motion; the cost of the procedure; the availability of appeal; the validity of the patent during review; and the permissible outcomes.⁸⁶

The time period during which a post-grant review can be initiated must be specified. At the EPO, the opposition period is open for nine months.⁸⁷ More than 97% of all EPO opposition cases are filed within five days of that deadline.⁸⁸ While a longer opposition period may allow for better preparation of cases, it also allows the parties to engage in negotiations. As pointed out before, settlements at this stage have the potential to be made at the cost of society at large. The opponent and the patent holder may have strong incentives to settle, since a cozy duopoly is much better than a market with free entry resulting from the patent being revoked. Hence, a long post-grant review period does not serve the purpose of the patent system well. We suggest limiting the opposition period to nine months or fewer.

A related issue concerns the question of whether settlements between the parties should be allowed once the post-grant review has been initiated. In EPO opposition proceedings, an opponent may drop her case, but the EPO retains the right to examine the validity of the patent on its own motion.⁸⁹ This right is a powerful threat against settlements, and there is little reason to encourage the use of settlements in a dispute that focuses

85. Graham et al., *supra* note 4, at 83-85.

86. Another design parameter on which we do not comment due to lack of evidence is the question of whether the original examiner should be included in the review process, as is sometimes the case at the EPO. *See* EPC, *supra* note 58, art. 19(2). The effect of this choice on the outcome of the opposition has not yet been studied, although work to do this is underway.

87. *See* EPC, *supra* note 57, art. 99.

88. Based on author's own computations. *See supra* note 32.

89. EPC Implementing Regulations, *supra* note 66, R.60(2).

on the *validity* of a patent. The public, a silent participant in the process, is unlikely to benefit from the settlement outcome. Given the public's interest in avoiding collusive settlements, we argue against the admission of settlements during the post-grant review process.

Any third party could conceivably have information about the subject matter of the patent, its novelty, and other aspects bearing on its validity. As a direct implication, there should be no restrictions on the type of opponent admitted to the procedure. This rule will allow public-interest groups and non-governmental organizations to participate in these proceedings, enlarging the set of parties that may provide information for the review decision.

Another important design parameter of a post-grant review system concerns the cost of the proceedings. Keeping the opponent's costs low will increase the likelihood of post-grant reviews, but it will also increase the number of cases. A post-grant review system that involves costly discovery is likely to achieve the opposite result, and it may make the new institution a battleground for cash-rich players. Moreover, the inherent danger of post-grant reviews becoming a strategic instrument to harass small firms and independent inventors would increase. The empirical results discussed above are reassuring: the EPO institutional design shields independent inventors from strategic abuse by means of the opposition mechanism. On balance we favor a low cost system, in particular, the inclusion of mechanisms that guard against the raising of rivals' costs via discovery.

The EPO experience also shows that an appeal mechanism should be in place to correct potential errors of the post-grant review board: about one third of the opposition cases at the EPO lead to an appeal.⁹⁰ In Europe, the appeal is heard by the Technical Appeal Boards of the EPO.⁹¹ Currently, the Appeal Boards form part of the EPO, but some efforts are under way to turn the Appeals Board into a formally independent institution. To give challengers and patent-owners access to a full-fledged court hearing, we advocate letting the Federal Circuit decide about appeals arising from the post-grant review process.

The patent's validity should be maintained while it is under review. Otherwise, there would be strong incentives to initiate patent reviews merely to render the patent invalid for some time. Once a first-instance review has revoked the patent, however, the presumption of validity should be discontinued. The intensive scrutiny of the post-grant review

90. See Table 1, *supra*, at 1004.

91. EPC, *supra* note 58, art. 19.

deserves greater weight than the initial patent examination, which takes place under strict resource constraints.

Post-grant review should not be used to broaden a granted patent. This asymmetry in favor of the opponent, or society, simply provides a balance to the initial asymmetry in favor of the applicant. While the applicant will use all of its information to its own advantage during the negotiations with the examiner, the scope of information available to the examiner may be seriously restricted. Thus, the examiner's error distribution will favor the applicant. Given this bias, a broadening of the patent should not be allowed in the review round.

Finally, one of the shortcomings of the European opposition system is the excessive duration of opposition and appeal cases. As we show in Table 1, it can take 4 years at the median to resolve an opposition case with subsequent appeal. Opposition and appeal last longer than 6.2 years for one quarter of all cases.⁹² The introduction of a post-grant review system may require shifting resources from examination to post-grant reviews if the introduction of the new institution is not accompanied by the provision of additional capacity. Even in this scenario, we view the introduction of a post-grant review positively because post-grant reviews target socially important patent rights. One resource unit can be employed to considerably expedite the opposition process, which largely concerns valuable patents, while taking the same resource unit away from examination would lead to a small delay of the average duration of examination, where only a small share of patent applications are valuable.

In conclusion, we recommend a post-grant review system that is inexpensive both to opponents and patent holders, that limits the parties' incentives to settle at the expense of society, that permits both parties to appeal, that leads to swift decisions, and that allows for a narrowing, but not a broadening, reissue of patents.

B. Expected Impact

Given the experience with post-grant reviews at the EPO, what is the likely welfare impact of the introduction of a post-grant challenge mechanism in the United States? In another publication, with our two co-authors, Stuart Graham and David Mowery, we conclude that post-grant review will generate substantial welfare gains as long as the system yields a reasonable percentage of revocations and is not too expensive.⁹³ We reach this conclusion by considering a variety of scenarios, which are replicated

92. *Id.* art. 19.

93. Graham et al., *supra* note 4.

in Table 3 and Figure 2 and which show the benefit-cost ratio under a variety of different scenarios.

Table 3 has three panels, each corresponding to a set of assumptions about outcome probabilities. The first panel uses the probability that a U.S. patent is found valid during litigation as reported by Allison and Lemley.⁹⁴ The second panel uses the observed opposition outcome probabilities for the EPO system given in Table 2. The third panel uses the observed reexamination outcome probabilities of the USPTO system, given in Hall et al.⁹⁵ The third choice is very conservative; an opposition system is unlikely to lead to patent revocation probabilities as low as 11%. For each of these three outcome scenarios, we report five computations, three using a low opposition cost of \$100,000 and two using the higher estimate of \$500,000 that was used by Levin and Levin.⁹⁶ We also experiment with assuming a social cost for rejection and an avoided cost for patent amendment as well as for patent revocation. Almost all of the scenarios yield benefit-cost ratios well in excess of unity, with the exception of some scenarios that use the USPTO reexamination outcome probabilities. The lowest ratios for each panel are for the high opposition cost cases. Hall et al. conclude that unless the opposition system is very expensive to operate and yields results similar to those now obtained with the USPTO reexamination system, it would generate substantial welfare gains.⁹⁷

94. John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205-06 (1998).

95. Hall et al., *supra* note 4, at 131 tbl.4.3.

96. Jonathan Levin & Richard Levin, *Benefits and Costs of an Opposition Process*, in PATENTS IN THE KNOWLEDGE-BASED ECONOMY, *supra* note 4, at 120, 137-38.

97. Hall et al., *supra* note 4, at 138.

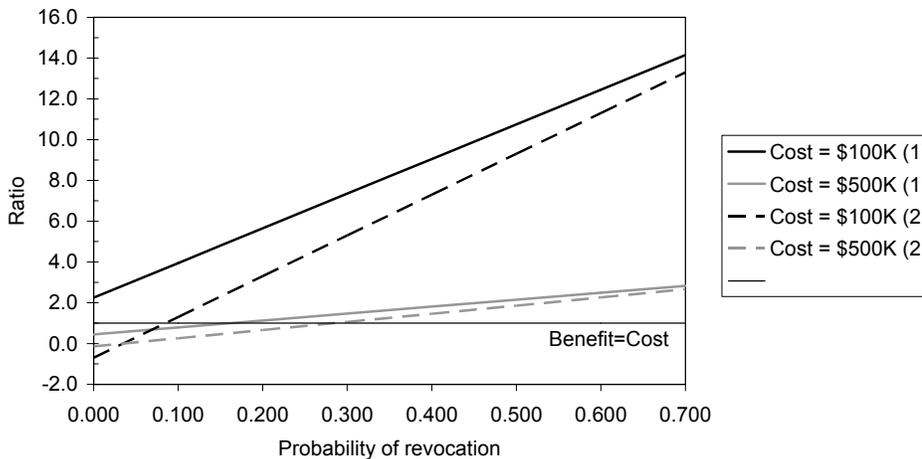
Table 3
Welfare Computation for Post-Grant Review Systems under Different Scenarios

Scenario	Cost of review case per patent (in thousands)	Outcome Probabilities			Benefits (avoided cost in thousands)			Total benefit per patent (in thousands)	Benefit/Cost Ratio
		Revocation	Amendment	Rejection	Revocation	Amendment	Rejection		
Validity probability from Allison & Lemley:									
Low cost	\$100	0.45	0.03	0.25	\$2,000	\$0	\$0	\$900	9.0
Low cost	\$100	0.45	0.30	0.25	\$2,000	\$300	\$0	\$990	9.9
High cost	\$500	0.45	0.30	0.25	\$2,000	\$0	\$0	\$900	1.8
Low cost; rejection raises cost	\$100	0.45	0.30	0.25	\$2,000	\$0	-\$200	\$850	8.5
High cost; rejection raises cost	\$500	0.45	0.30	0.25	\$2,000	\$0	-\$200	\$850	1.7
Observed opposition outcome probability for the EPO system:									
Low cost	\$100	0.35	0.33	0.32	\$2,000	\$0	\$0	\$700	7.0
Low cost	\$100	0.35	0.33	0.32	\$2,000	\$300	\$0	\$799	8.0
High cost	\$500	0.35	0.33	0.32	\$2,000	\$0	\$0	\$700	1.4
Low cost; rejection raises cost	\$100	0.35	0.33	0.32	\$2,000	\$0	-\$200	\$636	6.4
High; rejection raises cost	\$500	0.35	0.33	0.32	\$2,000	\$0	-\$200	\$636	1.3

Observed reexamination outcome probability for the USPTO system:																			
Low cost	\$100	0.11	0.63	0.26	\$2,000	\$0	\$0	\$220	2.2										
Low cost	\$100	0.11	0.63	0.26	\$2,000	\$300	\$0	\$409	4.1										
High cost	\$500	0.11	0.63	0.26	\$2,000	\$0	\$0	\$220	0.4										
Low cost, rejection raises cost	\$100	0.11	0.63	0.26	\$2,000	\$0	-\$200	\$168	1.7										
High cost, rejection raises cost	\$500	0.11	0.63	0.26	\$2,000	\$0	-\$200	\$168	0.3										

Figure 2 gives a graphical illustration of the results of our computations under a number of different scenarios. This figure plots the computed benefit-cost ratio versus the assumed probability that a patent will be revoked. We consider four scenarios: two with an opposition cost of \$100,000 and two with a cost of \$500,000. For each cost assumption, the first case has an avoided cost for patent revocation of two million dollars, an avoided cost for patent amendment of \$300,000, and a rejection probability of 25%, while the second less favorable case has the same avoided cost for patent revocation, but a social cost for the rejection of opposition of \$200,000 and a rejection probability of 35%. In all cases, the amendment probability is simply one minus the revocation and rejection probabilities. We also show the unit line where benefits equal costs to assist in interpretation. Costs exceed benefits only when the revocation probability is extremely low, except for the situation where the cost of an opposition is \$500,000 and rejection of an opposition leads to *increased* litigation costs rather than leaving them unchanged.

Figure 2
Benefit-cost ratio versus the probability the patent is revoked



VII. CONCLUSION

Patent offices are not perfect data-processing machines, and patent examiners are not perfect assessors of patent applications. Patent examiners' tasks are particularly challenging if the technological or scientific frontier is moving fast, and if relevant information has not yet been included fully in the written material that patent examiners use to understand the state of the art. In such a context, the parties with the most salient and relevant knowledge for the process of examining or reexamining a patent are in-

formed third parties and, in particular, the patent applicant's competitors. Our inspection of the EPO opposition system shows that post-grant review mechanisms can provide proper incentives for these parties to supply valuable information to the patent office. A properly designed post-grant review mechanism, similar to the one broadly described in Part VI, should generate considerable welfare gains for the intellectual property system. Given the current state of the U.S. patent system, the introduction of such a mechanism, possibly in conjunction with other reforms such as an increase in the nonobviousness standard, would improve its efficiency and lower the burden from litigation.

PATENT SYSTEM REFORM: ECONOMIC ANALYSIS AND CRITIQUE

By Carl Shapiro[†]

ABSTRACT

Considerable recent research suggests that the U.S. patent system is out of balance: the PTO's typically brief review process is allowing too many "questionable" patents to be issued that would likely be found invalid with more thorough review. When patents are issued for inventions that are not truly novel, or are obvious, consumers are harmed, competition is restricted, and innovation is hindered—all contrary to the underlying purposes of the patent system. Critics of the current system claim that "questionable" patents are indeed having significant, adverse effects on consumers, competition, and innovation. The Federal Trade Commission and the National Academies of Science recently issued extensive reports suggesting that major reforms to the U.S. patent system are needed to reduce these adverse effects. This Article reviews some of the evidence on the prevalence of such questionable patents, diagnoses their commercial impact, and then critiques a number of the FTC and NAS patent reform proposals. A strong economic case can be made for proposals to strengthen the PTO to improve the speed and accuracy of the patent examination process; to publish all patent applications after eighteen months; to establish a new administrative procedure to allow post-grant review of patents; to strengthen prior user rights; and to restrict the ability of patent owners to seek treble damages for willful infringement.

TABLE OF CONTENTS

I.	INTRODUCTION	1018
II.	THE ROLE OF THE FTC—PATENT POLICY AND COMPETITION ADVOCACY	1021
III.	PATENT REFORM IS PREFERABLE TO COMPULSORY LICENSING	1023
IV.	EVIDENCE THAT PATENT REFORM IS NEEDED.....	1027
V.	WHAT IS THE COMMERCIAL IMPACT OF QUESTIONABLE PATENTS?	1031
VI.	FTC AND NAS PROPOSALS REGARDING PATENT PROSECUTION.....	1035
	A. Provide More Funds to the USPTO (FTC Recommendation 4, NAS Recommendation 4)	1035
	B. Reforming the Operations of the USPTO (FTC Recommendation 5, NAS Recommendation 4)	1037

© 2004 Carl Shapiro

[†] Transamerica Professor of Business Strategy, Haas School of Business, University of California at Berkeley. I thank Joseph Farrell for comments on an earlier draft.

C. Publish All Patent Applications After 18 Months (FTC Recommendation 7, NAS Recommendation 7)	1038
VII. FTC AND NAS PROPOSAL REGARDING POST-GRANT REVIEW AND OPPOSITION	1040
VIII. FTC AND NAS PROPOSALS REGARDING PATENT LITIGATION	1043
A. Validity Challenges Based on a “Preponderance of the Evidence” (FTC Recommendation 2)	1043
B. Prior Use Rights/Continuing Applications (FTC Recommendation 8)	1044
C. Require Written Notice or Deliberate Copying for Willfulness (FTC Recommendation 9, NAS Recommendation 6)	1045
IX. CONCLUSION	1046

I. INTRODUCTION

The chorus of complaints about the U.S. patent system has grown louder in recent years. Notably, some of the most powerful complaints now are coming from companies that themselves own many patents. These companies devote substantial resources to research and development (R&D), and they appreciate that patent protection can be crucial for earning a return on their R&D expenditures. Although these companies rely on patents to protect their inventions, they feel strongly that defects in the patent system are raising costs, imposing uncertainty, and restricting product design choices. Ultimately, the companies claim these defects hinder their ability to compete, to innovate, and to contribute to economic growth.¹

Complaints regarding the patent system typically allege that the U.S. Patent and Trademark Office (USPTO) issues many questionable patents, for example, patents that are likely to be invalid or contain overly broad claims. In terms of the statutory requirements for patentability, these concerns typically involve patents covering technologies that either were not novel or were obvious at the time the patent application was filed. In particular, critics have berated the quality of patents in the areas of computer software and Internet business methods.² Everyone seems to have his or her favorite example of an absurd patent issued by the USPTO.³

1. See, for example, the extensive transcript from hearings held in 2002 by the Federal Trade Commission. FTC, *Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy*, <http://www.ftc.gov/opp/intellect/index.htm> (last visited Aug. 1, 2004) [hereinafter FTC, *Hearings*] (providing speeches and transcripts from the FTC’s 2002 hearings). These concerns were also voiced at the conference on patent reform hosted by the Berkeley Center for Law and Technology and *Berkeley Technology Law Journal*, which was held in Berkeley, California on April 15-16, 2004. Symposium, *Ideas into Action: Implementing Reform of the Patent System*, 19 BERKELEY TECH. L.J. 857 (2004) [hereinafter Symposium, *Ideas into Action*].

2. See, e.g., Julie E. Cohen, Reverse Engineering and the Rise of Electronic Vigilantism: Intellectual Property Implications of “Lock-Out” Programs, 68 S. Cal. L. Rev.

Questionable patents can harm competition and hinder innovation by forcing market participants to pay licensing royalties, incur substantial legal expense to defend against infringement claims, engage in design-around efforts that raise costs and/or hinder product performance. Numerous industry participants asserted at the Federal Trade Commission Hearings that these costs are substantial for patents they insist are invalid.⁴ According to critics, a patent holder can have real power even without being a true inventor because the systems for patent issuance and patent litigation are tilted in favor of patent applicants and patent holders. The result is that the patent system, while intended to promote innovation, instead places sand in the gears of our innovation engine.

To examine the balance between competition and patent law and policy, the Federal Trade Commission (FTC) and the Antitrust Division of

1091 (1995) (examining patent protection for computer programs); Mark Lemley, *Rational Ignorance at the Patent Office*, 95 Nw. U. L. Rev. 1495, 1495 (“The PTO has come under attack of late for . . . allowing bad patents to slip through the system. The criticism is particularly strong in specific industries, notably software and Internet “business method” patents, in which the PTO has arguably failed to respond quickly enough to changing legal circumstances.”) (footnotes omitted); Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577 (1999).

3. Amazon’s “one-click” patent may be the most often criticized software patent. Amazon.com, with two highly publicized Internet business-method patents, ignited the furor last September, when the U.S. Patent and Trademark Office (PTO) awarded the company patent number 5,960,411. The patent, although it does not explicitly use the phrase “one-click,” protects Amazon’s online ordering system, which allows consumers to make purchases with a single mouse click. A month after the patent was issued, Amazon filed a lawsuit against barnesandnoble.com, claiming that its ordering system infringed the one-click patent. Just before Christmas, Amazon won a preliminary injunction, prohibiting its competitor from using any one-click shopping method.

Evan Ratliff, *Patent Upending*, WIRED, June 2000, at 208, available at <http://www.wired.com/wired/archive/8.06/patents.html>. Previously, U.S. Patent No. 5,241,671, issued to Compton’s New Media on August 31, 1993, served as a poster child for patents that the PTO should never have issued. This patent “contained 41 claims that broadly covered any multimedia database allowing users to simultaneously search for text, graphics, and sounds—basic features found in virtually every multimedia product on the market.” Simson L. Garfinkel, *Patently Absurd*, WIRED, July 1994, at 104, 109, available at <http://www.wired.com/wired/archive/2.07/patents.html>. A more recent, if less visible, example is Microsoft’s patent for a “time based hardware button for application launch.” U.S. Patent No. patent number 6,727,830 (issued Apr. 27, 2004). This patent covers technology enabling different applications to be launched depending upon the length of time that a button on a hand-held computer is pressed. See Victoria Shannon, *Pioneer Who Kept the Web Free Honored With a Technology Prize*, N.Y. TIMES, June 14, 2004, at C4.

4. See FTC, *Hearings*, *supra* note 1.

the U.S. Department of Justice (DOJ) held twenty-four days of hearings, with testimony from more than 300 panelists. Based on these hearings, in October, 2003 the FTC released an extensive report, *To Promote Innovation: A Proper Balance of Competition and Patent Law and Policy* (“FTC Report”), calling for a number of major reforms in the U.S. patent system.⁵ Further fueling interest in patent reform, the National Academies of Science (NAS) released its own report in April 2004, *A Patent System for the 21st Century* (“NAS Study”), also calling for significant changes in the U.S. patent system.⁶

Does the U.S. patent system need major legislative reform? Or is some tinkering around the edges sufficient to correct imperfections in the system? All in all, there is compelling evidence that the U.S. patent system could benefit from significant reform. Reform is needed both in the process by which patents are granted by the USPTO and in the procedures used when patents are litigated in the Federal courts.

In Part II, I address the role of the FTC in the patent reform process. I then explain why antitrust law alone cannot, and should not, be expected to solve problems with the patent system. Next, I evaluate the evidence regarding the changing role of patents and the commercial impact of questionable patents, which are empirical issues at the core of the patent reform debate. With this essential background, the remainder of this Article is devoted to an economic critique of a number of the FTC and the NAS proposals for patent reform.⁷

5. FTC, *TO PROMOTE INNOVATION: A PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY* (2003) [hereinafter *FTC REPORT*], <http://www.ftc.gov/opa/2003/10/cpreport.htm>.

6. NAT'L ACAD. OF SCIS., *A PATENT SYSTEM FOR THE 21ST CENTURY* (Stephen A. Merrill et al. eds., forthcoming 2004) [hereinafter *NAS STUDY*], <http://www.nap.edu/books/0309089107/html>; see also *BD. ON SCI., TECH., AND ECON. POLICY*, NAT'L ACAD. OF SCIENCES, *PATENTS IN THE KNOWLEDGE BASED ECONOMY* (Wesley M. Cohen & Stephen A. Merrill eds., 2003) (providing accompanying research from the National Research Council of the National Academies of Science).

7. I also report reactions to the FTC proposals by some industry participants and association representatives. In April, 2004, the FTC and NAS, among others, co-sponsored a conference with the Berkeley Center for Law and Technology and the *Berkeley Technology Law Journal* to discuss the substance and process of patent reform. Symposium, *Ideas Into Action*, *supra* note 1. At this conference, I served as moderator of a panel consisting of representatives of a number of major companies (Cisco, eBay, Genentech, Google, Intel, Microsoft, and Symantec) along with representatives of several associations of attorneys (ABA IP Section, AIPLA, BIO, and IPO). See *Edited & Excerpted Transcript of the Symposium on Ideas into Action: Implementing Reform of the Patent System*, 19 BERKELEY TECH. L.J. 1053, 1122 (2004) [hereinafter *Symposium Transcript*].

II. THE ROLE OF THE FTC—PATENT POLICY AND COMPETITION ADVOCACY

Fault lines in the patent policy debate are exposed by asking why the FTC, an agency that focuses on consumer protection and competition policy, is proposing reforms to the patent system, a system established by Congress and operated largely by the USPTO and the Federal Courts. Given that the antitrust authorities have displayed hostility to intellectual property rights in the past,⁸ one may ask whether the FTC is the proper agency to propose reforms designed in part to make it harder for patent applicants to obtain and enforce patents. Is the FTC overly focused on eliminating the short-term market power that the patent system is designed to grant? Does the FTC give insufficient attention to the long-term positive effects of patents on innovation?

Currently the FTC and the DOJ appreciate that intellectual property can confer short-term monopoly power that is not necessarily anti-competitive.⁹ More recently, R. Hewitt Pate, currently Assistant Attorney General for Antitrust, noted:

A few decades ago, it might have been accurate to say that anti-trust and IP were in conflict. In fact, for many years my own agency had a “Professions and Intellectual Property” section that was active in opposing the exercise of IP rights. In that era, our

These panelists provided their reactions to the FTC proposals, some of which are incorporated in this article.

8. The difference now from the antitrust treatment of intellectual property at the Department of Justice (DOJ) in the 1970s can be seen by considering the list of prohibited practices that came to be known as the “Nine No-No’s.” See R. Hewitt Pate, *Antitrust and Intellectual Property*, Address Before the American Intellectual Property Association (Jan. 24, 2003) [hereinafter Pate, Address] (citing Bruce B. Wilson, *Patent and Know-How License Agreements: Field of Use, Territorial, Price and Quantity Restrictions*, Address Before the Fourth New England Antitrust Conference (Nov. 6, 1970)) (providing also a recent statement by the current Assistant Attorney General for Antitrust explaining that the DOJ is far more willing to consider the pro-competitive aspects of various licensing arrangements than it was thirty years ago), at <http://www.usdoj.gov/atr/public/speeches/200701.htm>; see also Richard J. Gilbert and Carl Shapiro, *Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No’s Meet the Nineties*, in *BROOKINGS PAPERS ON ECONOMICS: MICROECONOMICS* (1997) (discussing how much the 1995 DOJ/FTC Guidelines for the Licensing of Intellectual Property differ from the earlier enforcement approach).

9. The DOJ/FTC “Antitrust Guidelines for the Licensing of Intellectual Property” states clearly, “The Agencies will not require the owner of intellectual property to create competition in its own technology.” U.S. DEP’T OF JUSTICE & FTC, *ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY 7* (1995) [hereinafter *ANTITRUST GUIDELINES*], <http://www.usdoj.gov/atr/public/guidelines/ipguide.pdf>.

view was that intellectual property rights regimes created monopolies to spur innovation, while the antitrust laws sought to eliminate monopolies. The modern view, in contrast, is that intellectual property and antitrust laws both seek to promote innovation and consumer welfare.¹⁰

From an economic standpoint, the FTC and the DOJ have a legitimate and important role to play in the debate over reforming the patent system. This role is part of their broader, well-recognized competition advocacy mission. With their general expertise in competition policy, the FTC and the DOJ regularly comment on the activities of many other expert agencies.¹¹ So long as the FTC and the DOJ recognize that their comparative advantage is in competition policy and not in a given industry or policy area, they can contribute their valuable perspective to the debate. There is no reason patent policy should differ in this respect.

While it is fair to question the FTC's expertise with regard to the details of how the patent system operates, especially as regards USPTO procedures, there are legitimate policy reasons to listen carefully to the FTC's concerns and proposals. Put simply, the USPTO tends to focus on the interests of its "customers," namely patent applicants and patentees, while the FTC and the DOJ have an institutional interest in serving the interests of consumers and competition.¹²

Furthermore, two general principles of economic regulation teach us to be wary that the USPTO may be issuing too many patents, or patents that are overly broad. First, the general theory of regulatory capture teaches us to be on the lookout for regulatory agencies that come to serve the interests of those they are intended to regulate, rather than the broader public

10. Pate, Address, *supra* note 8. Assistant Attorney General Pate's speech should leave no doubt that the DOJ no longer condemns as *per se* violations most of the infamous "Nine No-No's" from the 1970s.

11. The list includes: Department of Transportation regulations affecting competition in the airline industry; Federal Energy Regulatory Commission rules affecting electricity competition; Federal Drug Administration rules affecting markets for pharmaceutical drugs; and Federal Communications Commission rules governing telecommunications and media. Also, comments filed by the Antitrust Division of the DOJ in a wide variety of regulatory proceedings can be found at <http://www.usdoj.gov/atr/public/comments/comments.htm>.

12. See, e.g., Brian Kahin, Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, Presentation Before the Federal Trade Commission and Department of Justice (Mar. 19, 2002), <http://www.ftc.gov/opp/intellect/020319briankahin.pdf> ("[T]he USPTO is focused on its internal operations rather than on the proper functioning of the patent system as a whole. It does not engage economists and does not participate in mainstream debate on innovation, competition, and economic growth.").

interest.¹³ In the case of the USPTO, the theory of regulatory capture suggests that the USPTO is too inclined to issue patents, or to allow broad claims, without giving sufficient weight to the costs that these patents impose on parties other than patent applicants, namely other companies and final consumers.¹⁴ Second, general principles of competition policy teach us that monopolies created by the government can be among the most powerful and most durable. Without questioning the principle that a patent holder's exclusive rights are justified when they are based on genuine invention, from an antitrust perspective such patent monopolies should not be granted lightly. Therefore, it is a bit jarring that the burden of proof is on the USPTO to establish that a patent should not be granted, especially given the presumption of validity then afforded to a patent when its validity is challenged in the Federal courts.

III. PATENT REFORM IS PREFERABLE TO COMPULSORY LICENSING

Given their concerns about competition policy, the FTC and DOJ naturally ask for justifications when the government grants monopolies to private parties. All too often historically, such grants, whether in the form of explicit monopoly franchises or trade barriers erected to protect local industry, have served powerful private interests at the expense of the general public.¹⁵ Competition authorities have an important role to play in curbing unjustified monopoly power by advocating against policies that raise entry barriers and protect incumbents without promoting economic efficiency or other important social goals. Patents granted for technologies that were not novel or were "obvious" when the patent applicant was filed certainly benefit those patent applicants who are able to obtain such undeserved patents. However, innovation, competition, and consumers suffer as a result.¹⁶

How can the competition authorities address and control this particular type of unjustified monopoly power? At times when these authorities have

13. *See, e.g., id.* ("[The PTO] system operates by rewarding strong private property rights on an *ex parte* basis.").

14. *See, e.g., id.* ("Once the patent is granted, the administrator [of the patent system] plays no further role and can therefore be indifferent to how patents play out in practice.").

15. *See, e.g.,* W. KIP VISCUSI ET AL., *ECONOMICS OF REGULATION AND ANTITRUST* ch. 13 (1992) ("Franchise Bidding and Cable Television"); George T. Stigler, *The Economic Theory of Regulation*, 2 *BELL J. OF ECON.* 3 (1971).

16. Below I discuss evidence regarding the commercial impact of questionable patents.

exhibited hostility to patent monopolies, they restricted the rights of patent holders by imposing compulsory licensing or by limiting the ways in which patent holders could exploit their own technology through licensing.¹⁷ Fortunately, the DOJ and the FTC have moved away from such policies over the past twenty-five years. As noted above, the DOJ/FTC's "Antitrust Guidelines for the Licensing of Intellectual Property" disavow mandatory licensing and generally inquire whether a licensing agreement harms competition that would have arisen in the absence of the license:

The Agencies will not require the owner of intellectual property to create competition in its own technology. However, antitrust concerns may arise when a licensing arrangement harms competition among entities that would have been actual or likely potential competitors in a relevant market in the absence of the license

18

More recently, Assistant Attorney General R. Hewitt Pate has been quite clear that the Antitrust Division does not regard a patent holder's unilateral refusal to license its patents as an antitrust violation.¹⁹

However, the courts have been less clear about this principle. In a widely criticized decision, the Ninth Circuit found in *Image Technical Services v. Eastman Kodak Co.*,²⁰ that Kodak's refusal to sell its patented parts to rivals seeking to service Kodak's copiers constituted an antitrust violation. The court reasoned that Kodak's refusal to deal was based on its desire to earn a return on its R&D investments rather than based directly

17. One well-known case was the FTC's challenge to Xerox's licensing practices in the 1970s. *In re Xerox Corp.*, 86 F.T.C. 364 (1975); see also Willard K. Tom, *The 1975 Xerox Consent Decree: Ancient Artifacts and Current Tensions*, 68 ANTITRUST L.J. 967 (2001) (providing a recent discussion of this case and the light it sheds on the antitrust treatment of intellectual property during that time period). Similarly, in the area of trade secrets, the DOJ brought suit against the float glass producer Pilkington in 1994. *Complaint, United States v. Pilkington* (D. Ariz. May 1994), at <http://www.usdoj.gov/atr/cases/f0000/0014.htm>.

18. ANTITRUST GUIDELINES, *supra* note 9, at 7.

19. Pate stated:

Even outside the intellectual property context, the monopolist's general right unilaterally to refuse to deal is a fundamental and well-recognized part of antitrust law. Likewise, the right not to license is a fundamental aspect of patent law. Using antitrust to permit subjective inquiry into the intellectual property holder's motivations for refusing to deal cuts at the very heart of the intellectual property right—the right to exclude.

Pate, Address, *supra* note 8.

20. 125 F.3d 1195 (9th Cir. 1997).

on protecting its rights as a patent holder.²¹ In contrast, the Federal Circuit's decision in *Xerox*²² has stated clearly that a patent holder's mere refusal to license does not constitute an antitrust violation:

In the absence of any indication of illegal tying, fraud in the Patent and Trademark Office, or sham litigation, the patent holder may enforce the statutory right to exclude others from making, using, or selling the claimed invention free from liability under the antitrust laws.²³

When a private party is granted a patent or copyright, giving the owner exclusive rights over certain intellectual property, and then antitrust rules are interpreted to require that these rights be licensed to others, public policy and the law are confused and contradictory. Apart from undermining precisely the exclusive rights that were granted, compulsory licensing raises the thorny issue of the *terms and conditions* on which such licenses must be granted.²⁴ As noted above, the current Assistant Attorney General for Antitrust declared that the DOJ does not consider a patent holder's unconditional refusal to license its technology to others an antitrust violation.²⁵ Compulsory licensing of patents is at odds with the antitrust princi-

21. *Id.* at 1219-20.

22. *In re Indep. Serv. Orgs. Antitrust Litig. (CSU, L.L.C. v. Xerox Corp.)*, 203 F.3d 1322 (Fed. Cir. 2000).

23. *Id.* at 1327. My discussion here only relates to the patent holder's unconditional, unilateral refusal to license, not the broader set of conduct covered by this Federal Circuit Court of Appeal's dicta. Clouding the picture further, the European Court of Justice recently ruled that a refusal to license a copyright could, under certain circumstances, constitute an abuse of a dominant position under Article 82 EC. Case C-418/01, *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG*, 2004 ECJ CELEX LEXIS 166 (29 Apr. 2004) (refining the Court's earlier decision in the *Magill* case, Case C-241/91, *RTE and ITP v. Commission*, 1995 E.C.R. I-743).

24. For example, in *Kodak*, after finding that Kodak was required to sell its patented parts to independent service organizations, the court inevitably had to determine the *prices* at which Kodak was required to sell a large number of parts. *Id.* at 1224. Mandatory licensing inevitably leads to the imposition of some form of ongoing price controls, a task to which courts are very poorly suited.

25. Likewise, Susan DeSanti, Deputy General Counsel for Policy Studies at the FTC and a major force behind the FTC Report, has made it clear in her speeches that the FTC seeks to reform patent law and policy in part because the FTC does *not* want to impose licensing duties on patent holders. See Susan DeSanti, *The FTC Report: Balancing Competition and Patent Policy*, Presented at the American Bar Association Antitrust Section Conference (May 20, 2004). Former FTC Chairman Muris also does not appear to favor mandatory licensing of patents. See Timothy J. Muris, *Competition and Intellectual Property Policy: The Way Ahead*, Remarks at the American Bar Association Antitrust Section Fall Forum (Nov. 15, 2001), <http://www.ftc.gov/speeches/muris/intellectual.htm>;

ple that companies, even monopolists, are not generally required to deal with their competitors.²⁶

From an economic perspective, imposing mandatory licensing on those whose innovations have the most significant economic effects makes little sense. Imposing mandatory licensing on patent holders who obtain a monopoly would undermine the rights of inventors whose innovations are the most valuable, as evidenced by their ability to transform an industry and, by dint of their superior technology, drive older technologies from the market. Innovation and competition are best promoted by carefully and properly defining the property rights awarded by the patent system, by taking steps to insure that such rights are only granted for true innovations, and then by letting patent holders assert those rights to exclude infringing rivals. This set of policies rewards genuine innovators, in some cases with monopoly power, and allows innovators to determine how best to exploit their own inventions. Under these policies, an innovator can refuse to license its invention to rivals and exploit the invention through internal growth, even if those rivals will be unable to compete effectively against the patent holder's improved technology.²⁷

Both patent and antitrust law and policy are far better served by reforming the patent system than by distorting antitrust law to curtail the

see also Timothy J. Muris, *The FTC and the Law of Monopolization*, 67 ANTITRUST L.J. 693 (2000).

26. For the most recent articulation of this general principle, see the Supreme Court's decision in the *Trinko* case, *Verizon Communs., Inc. v. Law Offices of Curtis V. Trinko, LLP*, 124 S. Ct. 872 (2004) (holding that traditional antitrust principles do not justify making the present case an addition to the few existing exceptions to the proposition that there is no duty to aid competitors). The Antitrust Division recently expressed its concerns about imposing duties to deal on monopolists generally in its Amici Curiae Brief in the *Trinko* case:

When . . . a monopolist's refusal to deal . . . on particular terms does make business sense apart from exclusionary consequences, antitrust law should avoid interfering with such business choices. At one extreme, a refusal to sell an input to a rival when it requires the incumbent to forfeit profits would make obvious business sense.

Brief of Amici Curiae U.S. Dep't of Justice Antitrust Division, *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 124 S. Ct. 872 (2004) (No. 02-682), <http://www.usdoj.gov/atr/cases/f201000/201048.pdf>.

27. Alternatively, the patent holder can choose to exploit its invention by forming a joint venture with another company, or by subdividing its patent rights and licensing them to various third parties subject to a variety of use restrictions. Many options are viable so long as the patent holder does not suppress competition that is *not* based on using its invention or suppress competition that would have arisen in the absence of license(s) with the patent holder.

rights of patent holders.²⁸ Were the FTC and/or the DOJ to use the anti-trust laws to impose compulsory licensing in order to reduce the perceived harmful effects of an overly generous patent system, the result would be far inferior to sensible patent system reform.

IV. EVIDENCE THAT PATENT REFORM IS NEEDED

Before looking specifically at the proposals by the FTC and the NAS to reform the patent system, let us step back and ask: how strong is the evidence that patent reform is needed?²⁹ After all, a series of anecdotes about so-called questionable patents issued by the USPTO need not imply that the patent system is in need of major reform. Nor does the observation that many litigated patents are found invalid imply that the system is broken. Some critics of the FTC Report simply do not believe that the FTC has established the need for reform of the patent system.³⁰

To provide context for this discussion, it is important to remember that the USPTO issues some 180,000 patents each year, with patent examiners spending an average of less than twenty hours on each patent application.³¹ Under this system, some mistakes must be made simply because

28. Indeed, under this view of patent and antitrust law and policy, the need for reform of the patent system is greater precisely *because* antitrust law cannot, and should not, solve the problem of questionable patents by imposing mandatory licensing. The antitrust agencies or the courts cannot, as a practical matter, impose mandatory licensing only in the cases of questionable patents.

29. The FTC and NAS Reports, and the references they cite, contain extensive evidence in various forms. Interested readers should delve more deeply using these sources. *See* FTC REPORT, *supra* note 5; *see also* NAS STUDY, *supra* note 6.

30. *See, e.g.*, Ian Simmons et al., *Safer Than a Known Way? A Critique of the FTC's Report on Competition and Patent Law and Policy*, ANTITRUST, Spring 2004, at 39. Simmons et al. state,

[T]he report ultimately fails to establish that its most significant proposed "new remedies" are needed to redress an actual imbalance between the goals of competition law and the operation of "the patent system"—an imbalance the report too often assumes but does not demonstrate with specific examples examined in the context of specific anti-trust relevant markets.

Id.

31. The PTO issued 173,072 patents during fiscal year 2003. USPTO ANN. REP. (2003), available at <http://www.uspto.gov/web/offices/com/annual/2003/2003annualreport.pdf>. According to the FTC Report, "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." FED'L TRADE COMM'N, TO PROMOTE INNOVATION: A PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY, EXECUTIVE SUM-

one cannot expect the far quicker, and cheaper, review by the USPTO to be as accurate as the extensive review that takes place in prolonged, expensive patent litigation. So, merely finding that many litigated patents are later held invalid hardly proves that the patent examination system is working poorly. Since criticism of the USPTO for issuing questionable patents is as old as the patent system itself, it is fair to ask what has changed lately to make patent reform more important, or urgent, than previously.

The quantity of patent-related activity undisputedly has surged in the last twenty years. According to the NAS Study, the number of U.S. patents issued nearly tripled from 66,290 in 1980 to 184,172 in 2001.³² The “propensity to patent” also grew, from 0.35 to 0.51 patents per million dollars R&D spending.³³ Likewise, the number of patent lawsuits handled by the federal district courts doubled from 1200 in 1988 to nearly 2400 in 2001.³⁴ Most of the growth in patenting is accounted for by the information technology sector.³⁵

However, systematic empirical evidence regarding trends in patent quality is mixed. The NAS Study discusses three such measures: “(1) the ratio of invalid to valid patent determinations in infringement law suits; (2) the error rate in USPTO quality assurance reviews of allowed patent applications; and (3) the rate of claim cancellation or outright patent revocation in reexamination proceedings at the USPTO.”³⁶

Using these measures, the NAS Study reports that (1) the probability that a patent will hold up under court challenge has risen over time, reaching just over 50 percent in the more recent period; (2) the error rate reported in USPTO quality assessment audits rose slightly during the 1990s, but has only ranged from 3.6% to 7% since 1980 and declined in recent years to around 4%; (3) only about 10% of patents reexamined in the U.S. are completely revoked.³⁷ Of these three measures, the NAS Study states:

MARY 10 (2003) [hereinafter FTC EXECUTIVE SUMMARY], *reprinted in* 19 BERKELEY TECH. L.J. 861, 870 (2004).

32. NAS STUDY, *supra* note 6, at 22.

33. *Id.*

34. *Id.* at 25.

35. *Id.* at 24.

36. *Id.* at 39.

37. *Id.* at 40. The PTO measured its error rate most recently at 4.4%. USPTO ANN. REP., *supra* note 31, at 17 (also defining error as “at least one claim within the randomly selected allowed application under quality review that would be held invalid in a court of law” and the error rate as “the ratio of allowed applications with errors to the total number of allowed applications reviewed”). The PTO reports error rates of 6.6% in 2000,

Ostensibly, the USPTO's audits come closest to producing a measure of quality and therefore deserve closer examination. . . In any case, the history of the USPTO's quality review function does not inspire confidence that its results are meaningful and consistent over time. Created in 1974 in response to earlier criticisms of patent quality, the Office of Patent Quality Review was twice reviewed harshly by the Inspector General of the Department of Commerce.³⁸

The FTC Report also assembles a great deal of evidence regarding patent quality, along with evidence on other aspects of the patent system.³⁹

Looking at these reports and their underlying sources, defenders of the patent system point out that there is no compelling quantitative evidence that patent quality has declined. They further assert that whatever transition problems the USPTO may have had in certain areas, such as software and business methods patents, have been and will be adequately addressed as the USPTO gains experience and skill in these areas.⁴⁰

The NAS Study acknowledges the lack of compelling quantitative evidence showing a decline in patent quality, but states, "There are nevertheless several reasons to suspect that more issued patents are deviating from previous or at least desirable standards of utility, novelty, and especially non-obviousness and that this problem is more pronounced in fast-moving areas of technology newly subject to patenting than in established, less

5.4% in 2001, and 4.2% in 2002, while its goal for fiscal year 2003 was an error rate of 4.0%. *Id.*

38. NAS STUDY, *supra* note 6, at 40.

39. FTC REPORT, *supra* note 5 (including evidence such as: the role of patents in several key industries (Ch. 3); the substantive standards for patentability and their affect on competition and innovation (Ch. 4); patenting procedures and presumptions and their affect on competition and innovation (Ch. 5)).

40. *See, e.g.*, Edward G. Fiorito, *Chair's Bulletin*, 2001 A.B.A. SEC. INTELLECTUAL PROP. L. REP. 5, <http://www.abanet.org/intelprop/chair/apr01chair.html>. Fiorito states, A decade has passed and we don't hear the complaints about patenting software anymore. The patent system has learned how to handle this now established field of technology, and the media doesn't show any interest in the topic. However, the critics of the business method patents are singing the same tune that the critics of the software patents sang over a quarter of a century ago.

...

What Are We Doing About Business Method Patents? Plenty!

The United States Patent and Trademark Office is aggressively meeting the challenge of examining the growing number of business method patents classified in Class 705.

Id.

rapidly changing fields.”⁴¹ The NAS Study then presents evidence supporting this conclusion, citing (1) workload pressures on the USPTO; (2) patent approval rates; (3) changes in the treatment of genomic and business method inventions; and (4) application of the non-obviousness standard.⁴²

On workload pressures, the NAS Study reports that the number of examiners has not kept pace with the number of patent applications, which doubled from 1991 to 2001.⁴³ The number of examiners per 1000 applications declined about 20% over the past four or five years and is now slightly below nine.⁴⁴ The NAS Study also notes that applications have become more complex, as measured by the number of claims and prior art citations per application. The average time spent per application has remained largely unchanged, but the average pendency has risen from 18.3 months in 1990 to 24 months in 2002 and 26.7 months in 2003.⁴⁵

Turning to patent approval rates, or the percentage of patent applications that ultimately result in patents, the FTC and NAS differ as to how to properly measure these rates. According to the FTC Report, one witness calculated the USPTO’s grant rate at 98% in 2000, compared with 67% in Europe and 64% in Japan.⁴⁶ However, a USPTO witness criticized these calculations and stated that, properly measured, the USPTO grant rate was about 75%.⁴⁷ The NAS cites a study by Quillen and Webster finding that, after certain corrections are made, “the USPTO eventually issued patents on between 85 percent and 97 percent of the applications filed between 1993 and 1998—20 to 30 percent higher than official estimates, which have ranged between 60 percent and 70 percent for 20 years.”⁴⁸ Recognizing that many factors influence patent approval rates, the NAS Study states, “The committee believes that high acceptance rates, especially if increasing over time relative to comparable rates in other industrialized countries would be reason to look more closely at examination quality.”⁴⁹

41. NAS STUDY, *supra* note 6, at 41.

42. *Id.* at 41-49.

43. *Id.* at 41.

44. *Id.* at 42.

45. *Id.*

46. FTC REPORT, *supra* note 5, chs. 5, 6.

47. *Id.*

48. NAS STUDY, *supra* note 6, at 43 (citing C. Quillen and O. Webster, *Continuing Patent Applications and Performance of the U.S. Patent Office*, 11 FED. CIR. B.J. 1, 1-21 (2001), and R. Clarke, *U.S. Continuity Law and its Impact on the Comparative Patenting Rates of the U.S., Japan, and the European Patent Offices*, 8 J. PAT. & TRADEMARK OFF. SOC’Y 335, 335-49 (2003)).

49. *Id.* at 44.

The NAS Study then observes that patent approval rates at the European Patent Office and the Japanese Patent Office declined more rapidly since 1998 than did the patent approval rates at the USPTO.⁵⁰

The NAS Study expresses particular concern regarding genomic and business method inventions. The USPTO reviewed its operations in these areas during 2000-2001 and instituted new policies designed to improve patent quality. Presenting data on rates of patenting and patent pendency, the NAS study states:

The new policies reflected a recognition by USPTO management that standards needed to be tightened, at least in two technologies attracting large investments and a great deal of publicity and exhibiting a controversial surge in patenting activity. The question of what practical effect the measures had on examiners' behavior and USPTO output is difficult to answer. It is complicated by the lag between application filings and patent grants, the downturn in the economy and in technology investments that occurred in 2000, and other, nearly simultaneous, developments affecting patenting activity in these fields.⁵¹

Lastly, the NAS discusses the application of the non-obviousness standard at the USPTO. "A fourth reason to be concerned about patent quality is that there may have been some dilution of the non-obviousness standard as a result of court decisions and their incorporation in the examination guidance compiled in the USPTO's Manual of Patent Examination Procedure (MPEP)."⁵² The NAS Study cites various studies of Federal Circuit decisions in cases where patents were faced with non-obviousness challenges and asserts that "[a]lthough the committee considered these analyses, it did not reach a position on their significance regarding non-obviousness generally. Nevertheless, we are concerned about trends in the application of the obviousness standard to business method and genetic sequence inventions."⁵³

V. WHAT IS THE COMMERCIAL IMPACT OF QUESTIONABLE PATENTS?

While reasonable people can differ in interpreting the evidence on patent quality, there are many indications that the patent system has been put under great pressure over the past ten to twenty years and could benefit

50. *Id.*

51. *Id.* at 45.

52. *Id.* at 50.

53. *Id.* at 51.

from reform. In particular, the system would benefit from reforms in patent quality in areas of rapidly changing technology. To focus on those reforms that are most important for the economy, however, it is highly desirable to understand just *how* the problems with patent quality at the USPTO harm competition, innovation, and consumers.

In this respect, the natural tendency to focus on the most absurd patents issued fails to identify the most significant adverse commercial impact associated with the issuance of numerous questionable patents. Indeed, an argument can be made that if a patent is obviously invalid or almost sure to be found invalid if litigated, that patent should have little or no commercial impact. After all, the owner of such a patent would be unlikely to obtain a preliminary injunction to block sales of an alleged infringer, and anyone accused of infringing an obviously invalid patent would place very high probability on winning any infringement suit. Under these circumstances, the alleged infringer would have little reason to agree to significant royalties or engage in costly efforts to invent around the patent. Thus, it is far from clear that the patent holder could impose significant costs on the alleged infringer.⁵⁴ At best, the patent holder could threaten to engage in prolonged litigation to elicit a settlement from the alleged infringer just to avoid the costs of litigation. But even such a threat might lack credibility.⁵⁵

Precisely because obviously invalid patents afford their owners relatively little bargaining power, it appears difficult to identify specific patents that (1) should never have been issued because the examiners should have known not to issue them in the very limited time for review *and* (2) have significant commercial impact.⁵⁶ In fact, in an *equilibrium* of the patent litigation and settlement game, one expects to find two key patterns in

54. The analysis is more complex when a portfolio of patents of varying quality is asserted in combination, but the underlying principle that highly questionable patents afford their owners relatively little bargaining power still applies.

55. One could argue that even the weakest patent may be upheld by a jury, so alleged infringers always face a minimum litigation risk. If true, this implies that there really are no “obviously” invalid patents as I have defined the term, perhaps because of the requirement that invalidity be established by clear and convincing evidence. In this case, rather than pointing out their favorite “absurd” patents that have been issued, critics of the existing system should point out patents they consider to be “clearly invalid” (presumably due to lack of novelty or due to obviousness) yet have been upheld in litigation. Short of arguing that the infringing party botched its defense, this also appears to be a difficult task.

56. Of course, the examiner might have discovered the defect if given, say, twice as long to evaluate the patent application. But this type of situation seems more of an argument for increasing resources to the PTO rather than affecting more sweeping reforms.

the sample of patents actually litigated. Both of these properties result because costly litigation tends to occur only when each side is relatively optimistic, making settlement difficult. First, litigated patents should be of relatively high commercial significance. Otherwise, the litigation costs would not be worth incurring, even if the parties differed greatly in their views of the likely outcome of the patent litigation. Second, the outcomes of patent litigation (again, for the patents actually litigated) should be highly unpredictable. If the outcome in a given case were easily predictable, one would expect settlement to avoid litigation costs, because the parties presumably would not differ much in assessing the likely outcome of the litigation.

These arguments tell us that the problems with the patent system so many industry participants perceive do not primarily fit the picture often painted: absurd or obviously invalid patents being brandished by non-inventors who are exploiting the patent system to extract royalties from upstanding companies who are the true innovators. Rather, there appears to be a much more subtle and deeper complex of problems, consisting of the following basic elements: (1) a USPTO that lacks sufficient resources to handle the growing number of patents and whose expertise and knowledge of prior art can easily lag behind industry in areas where technology is rapidly advancing; (2) a USPTO process that favors patent applicants combined with a USPTO culture directed at issuing patents; (3) a narrow view of what should be considered “obvious” and thus not patentable; (4) the resulting presence of a very large number of patents that are likely to be invalid if actually tested in court; (5) the fear that many patents could be asserted against a given product, perhaps by a single entity holding a large portfolio of patents; (6) the danger that a company developing, designing, and even manufacturing a new product will be unaware of many patents which can then be asserted opportunistically against its products after it has made significant investments; (7) the danger that such an assertion can lead to an injunction, damages, and even treble damages in the case of willful infringement; (8) a very expensive and time consuming litigation process involving unpredictable juries; and (9) the legal requirement for “clear and convincing evidence” to prove a patent invalid.

Proving that such a complex of problems is widespread and important enough to warrant reforming the patent system is inherently difficult. The FTC Report and NAS Study are very helpful in assembling a variety of evidence, ranging from empirical studies to the testimony of practitioners, that provides considerable support for such reform. While more case studies of significant harm to competition and consumers due to questionable

patents would be helpful and interesting, I consider the evidence convincing enough to warrant a number of reforms.⁵⁷

One may fairly ask whether market forces, in the form of patent licensing agreements, can correct for poor patent quality, even if the underlying patent system is not well designed. Certainly, *ceteris paribus*, the “weaker” a patent, or the more likely that a patent will be found invalid if litigated, the lower the royalties it can command in licensing negotiations. After all, licensing takes place in the shadow of litigation, with licensing rates determined by the relative bargaining power of the patent holder and potential licensees/alleged infringers. Unfortunately, however, there is no reason to believe that the costs of a flawed patent system are eliminated through the operation of technology markets. To begin with, due to problems of free-riding and pass-through of royalties, we cannot count on litigation to invalidate patents that should never have been issued.⁵⁸

Furthermore, even holding aside the important free-riding and pass-through problems, a host of factors allows patent holders to wield significant negotiating power even when their patents are relatively weak: (1) the need for a challenger to present “clear and convincing” evidence to invalidate a patent; (2) the prospect that a plaintiff in a patent case may assert a whole portfolio of patents against the defendant; (3) the ability of patent holders to seek treble damages for willful infringement; (4) the prospect that significant investments made by the defendant that are specific to the patented technology will be lost or depreciate greatly if the patent holder obtains an injunction against the defendant’s products; and (5) the concern among patent defendants that jury trials are inherently unpredictable, so there is an irreducible risk that a jury will uphold the validity of a patent, even if that patent covers technology that objectively was not in fact novel and non-obvious. Therefore, even questionable patents can command non-trivial royalties in licensing negotiations. When many of these patents are issued, the effect is to create a “tax” on companies who are accused of infringing these patents. When many patents can read on a single product, as is common for computer hardware and software, the resulting “royalty stacking” can lead to substantial combined royalty rates and have serious economic consequences, even if each individual royalty rate is low.

57. *But see* Simmons et al., *supra* note 30, at 39 (finding the evidence assembled by the FTC unconvincing and calling for more case studies before engaging in patent reform).

58. *See* Joseph Farrell & Robert Merges, *Incentives to Challenge and Litigate Patents*, 19 BERKELEY TECH. L.J. 943 (2004); *see also* Mark Lemley & Carl Shapiro, *Probabilistic Patents*, J. OF ECON. PERSPECTIVES (forthcoming 2005) (manuscript at 25, on file with authors), available at <http://faculty.haas.berkeley.edu/shapiro>.

VI. FTC AND NAS PROPOSALS REGARDING PATENT PROSECUTION

This Part discusses specific FTC and NAS reform proposals, offers views on a number of these proposals, and reports reactions to those proposals from a number of companies and organizations.⁵⁹ My commentary on these proposals is divided into three sections, tracking chronologically the process by which a given patent is issued and asserted: (1) proposals relating to the process by which patents are issued by the USPTO, especially patent prosecution; (2) one proposal relating to a new post-grant review procedure; and (3) proposals relating to the process by which patents are litigated.

The most direct way to address the problems of patent quality is for the USPTO to perform more careful and extensive examination of patent applications. Of course, the USPTO strives to issue patents only for inventions that are truly novel and non-obvious. Furthermore, the USPTO has its own plan for improving patent quality, “The 21st Century Strategic Plan” (“USPTO Report”).⁶⁰ However, the FTC and NAS perspectives are useful because there are good reasons to fear that the USPTO’s culture, mission, and incentives are oriented more towards issuing patents and serving the interests of patentees rather than the broader public purpose of promoting innovation and competition.

A. Provide More Funds to the USPTO (FTC Recommendation 4, NAS Recommendation 4)

The most obvious step to improve patent quality is to devote more resources to examining patent applications, at least for certain industries where the problems of patent quality are perceived to be greatest. The FTC Recommendation 4 states, “Provide Adequate Funding for the USPTO.”⁶¹ Stated this way, the recommendation is hard to fault. Few would favor *inadequate* funding for the USPTO. NAS proposal 4 to “strengthen USPTO capabilities” is similar.⁶²

59. I convey here some of the reactions to those proposals from the companies and organizations represented on the industry/institutional panel that I moderated at the patent reform conference in Berkeley, California, in April, 2004. See *Symposium Transcript*, *supra* note 7, at 1122.

60. USPTO, THE 21ST CENTURY STRATEGIC PLAN (Feb. 3, 2003) [hereinafter USPTO Plan], <http://www.uspto.gov/web/offices/com/strat21/index.htm>.

61. FTC EXECUTIVE SUMMARY, *supra* note 31, at 12, *reprinted in* 19 BERKELEY TECH L.J. 861, 872 (2004).

62. NAS REPORT, *supra* note 6, at 5.

What constitutes “adequate” funding for the USPTO is a far more difficult question. Often, this debate is cast in terms of eliminating “fee diversion,” and thus permitting the USPTO to keep all of the patent application fees it collects. However, there is no reason to believe that the optimal level of resources at the USPTO matches up with those fee revenues, any more than the optimal budget for the FTC’s merger control mission should equal the FTC’s revenues from Hart-Scott-Rodino filings. More generally, there is no reason to expect the optimal funding of government regulatory functions to equal to fees raised from the parties directly subject to those regulations. So, while framing the debate in terms of “fee diversion” may be politically convenient, it avoids the question of what the USPTO’s budget should be.

To answer that question, we need to know about the USPTO’s “production function”: what changes in patent quality would result if the USPTO were given more resources? To learn this, the USPTO could experiment with devoting greater examination time to some patent applications to see if it reduced the error rate during the audit phase. The USPTO could also experiment further with the allocation of examiner time across different areas of technology. Or the USPTO could test whether error rates are systematically related to characteristics of examiners such as training or experience. Indeed, the NAS recommends, “[T]he USPTO should create a strong multidisciplinary analytical capability to assess management practices and proposed changes, provide an early warning of new technologies being proposed for patenting, and conduct reliable, consistent, reputable quality reviews that address office-wide and individual examiner performance.”⁶³

Providing the USPTO with more resources also would permit faster processing of patent applications. All parties agree that reducing the pendency of patent applications is desirable. The USPTO Report sets a goal of reducing the average pendency (measured from filing to ultimate disposal) to twenty-seven months by 2008.⁶⁴ While achieving this goal may indeed take hard work and good management at the USPTO, an outside observer is not impressed by an average lag of twenty-seven months in five years as a goal for processing patent applications, especially if each patent application is only given a few days work by a patent examiner.⁶⁵ There is also a

63. *Id.*

64. PTO Plan, *supra* note 60.

65. According to the PTO,

The two primary measures of Patent Organization processing time are: (1) first action pendency, which measures the average time in months until an examiner’s initial determination is made of the patentability of

tension between faster processing of patent applications and greater accuracy in the examination process.⁶⁶

The industry panel widely supported giving more resources to the USPTO. Yet no one wants a larger USPTO budget to translate into more questionable patents. So, the provision of additional funds to the USPTO was generally conditioned on the USPTO improving its operations. The USPTO Report provides one model for such improvements.⁶⁷

B. Reforming the Operations of the USPTO (FTC Recommendation 5, NAS Recommendation 4)

Apart from simply providing more resources to the USPTO, the FTC offers four specific recommendations to improve patent quality by modifying USPTO rules and implementing portions of the USPTO Report. The most popular of these with the industry panelists was to expand the USPTO's "second-pair-of-eyes" review from the area of business method patents, where it apparently has been well received, to "fields with substantial economic importance, such as semiconductors, software, and biotechnology, as well as other new technologies as they emerge."⁶⁸ One addition point was stressed by panelists, which was general support for the

an invention; and (2) total pendency, which measures the average time in months until an examiner either allows the patent to issue or the application is abandoned by the applicant.

USPTO ANN. REP., *supra* note 31, at 18. For fiscal year 2003, the PTO's goal for first action pendency was 18.4 months; this goal was achieved with an average first action pendency of 18.3 months. *Id.* The PTO's goal for total patent pendency was 27.7 months; this goal was achieved with an average total patent pendency of 26.7 months. *Id.* However, total pendency was higher in 2003 than in the three previous years where it ranged from 24.0 to 25.0 months. *Id.*

66. Indeed, the PTO states that "[w]hile the USPTO's long-term patent pendency goal remains 18 months, this goal will not be achieved in the near future because of the higher priority placed on quality and patent e-Gov initiatives." *Id.*

67. PTO Plan, *supra* note 60.

68. FTC EXECUTIVE SUMMARY, *supra* note 31, at 14, *reprinted in* 19 BERKELEY TECH L.J. 861, 878 (2004). Two of the other proposals are quite specific and designed to give the examiner better information: (1) to require applicants, upon the request of the examiner, to submit statements of relevance regarding their prior art references, and (2) to encourage the use of examiner inquiries under Rule 105 to obtain more complete information and to reformulate Rule 105 to permit reasonable follow-up. The last part of FTC Recommendation 5 is much more general: to 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." *Id.* at 13-14, *reprinted in* 19 BERKELEY TECH. L.J. 861, 877 (2004).

proposition that reducing pendency times for patent applications was commercially quite important.⁶⁹

Unfortunately, the FTC's proposals do not seek to address the possible "regulatory capture" concerns noted above, as reflected by evidence that the USPTO apparently sees its mission as serving its "customers," namely patent applicants. This concern is heightened by evidence that the USPTO issues patents for a very high fraction of patent applications.⁷⁰ While it is understandable that the FTC would steer clear of advocating a major overhaul of the USPTO, the NAS Study is critical of the USPTO and from a good-government perspective one wonders whether deeper institutional changes designed to alter the incentive structure at the USPTO would prove beneficial. For example, the governance of the USPTO could be changed so that consumer interests were better represented, or the incentives facing USPTO management could be redesigned to place much greater weight on patent quality.

C. Publish All Patent Applications After 18 Months (FTC Recommendation 7, NAS Recommendation 7)

A number of industry representatives, especially those in the information technology sector, are especially concerned about possible infringement actions arising from submarine patents that are invisible to them when their companies make major investment decisions.⁷¹ Economists have long understood that such opportunism, for example, appropriation of sunk investments reliant upon the patented technology that were made by others when they were unaware of the pending patent, can provide excessive returns to patent holders and deter investment by others. Naturally, problems of opportunism are less significant the sooner patent applications are visible to third parties.

Fortunately, most problems associated with submarine patents were solved by the American Inventors' Protection Act of 1999, which has resulted in roughly 90% of patent applications being published after eighteen months.⁷² The FTC states: "This new procedure appears to have increased business certainty and promoted rational planning, as well as re-

69. See, e.g., *id.* at 1145 (remarks by Herb Wamsley, Intellectual Property Owners); 1146 (remarks by Jeffrey Kusham, Sidley Austin Brown & Wood and BIO).

70. NAS STUDY, *supra* note 6, at 43 (especially the study cited there, C. Quillen and O. Webster, *Continuing Patent Applications and Performance of the U.S. Patent Office*, 11 FED. CIR. B.J. 1, 1-21 (2001)).

71. See *Symposium Transcript*, *supra* note 7, at 1147 (remarks by Carl Shapiro, Haas School of Business, University of California, Berkeley (co-moderator), summarizing the consensus).

72. FTC REPORT, *supra* note 5, ch. 4, at 27.

duced the problem of unanticipated ‘submarine patents’ used to hold up competitors for unanticipated royalties. For these reasons, Hearings participants advocated expanding the 18-month requirement to include [all patents].”⁷³

Great commercial problems can be caused by patents that are issued years after their initial application, perhaps because the applicant files continuations. In extreme cases, submarine patents have remained secret in the patent office for decades, during which time companies or even entire industries made investments that later became subject to hold-up. In such cases, patentees can easily obtain bargaining power out of proportion to their innovative contributions. Hoping to eliminate the last vestiges of these problems, the panelists uniformly supported the proposal to publish all patent applications after eighteen months. The NAS Study reaches the same conclusion.⁷⁴

One argument against this proposal is that some inventors may refrain from filing a patent application for fear that their inventions will be disclosed after eighteen months, yet no patent (or a very narrow patent) will be issued. After all, the basic *quid pro quo* in the patent system is that the patent holder obtains exclusive rights in exchange for fully disclosing his or her invention. While disclosure of all patent applications after 18 months might discourage some inventors who lack confidence that their inventions will be judged novel and non-obvious from filing patent applications, that may be a small price to pay to prevent the hold-up and opportunism that can arise with submarine patents. But even better might be a system whereby the USPTO is required to provide its First Office Action to the applicant before 18 months have elapsed.⁷⁵ Under that system, a patent applicant who received a discouraging first response could withdraw its application and thus retain its trade secrets.

73. FTC EXECUTIVE SUMMARY, *supra* note 31, at 15, *reprinted in* 19 BERKELEY TECH L.J. 861, 875 (2004). The NAS Study addressed this issue as part of its Recommendation 7 to “reduce redundancies and inconsistencies among national patent systems,” including “the U.S. exception to the rule of publication of patent applications after 18 months.” NAS STUDY, *supra* note 6, at 6.

74. “The United States should abandon its exception to the rule of publication after 18 months for applicants not intending to patent abroad.” NAS Study, *supra* note 6, at 104.

75. *Symposium Transcript*, *supra* note 7, at 1148 (remarks by Ron Myrick, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP and U.S. Council for International Business).

VII. FTC AND NAS PROPOSAL REGARDING POST-GRANT REVIEW AND OPPOSITION

I turn now to the next stage in the life of a patent application: after a patent has been issued. Given the short time available to review patent applications, it is inevitable that some applications will be granted in error.⁷⁶ Currently, virtually the only way for third parties to get such errors corrected is through very expensive and time-consuming litigation in the federal courts. What about a quicker, less expensive process, like a post-grant review procedure, by which third parties could have the USPTO take a second, more intensive look? If such a procedure were effective, the adverse commercial impact of questionable patents might be greatly reduced, even if many such patents were still issued.

Both the FTC and the NAS propose creating a new procedure to allow post-grant review of and opposition to patents.⁷⁷ While there was general support for such post-grant review, many panelists pointed out that “the devil is in the details” when it comes to designing such a procedure.⁷⁸ Several panelists noted that the existing *inter partes* reexamination process is rarely used and thus ineffective, suggesting that the detailed procedural rules are crucial.⁷⁹ The FTC recommends that Congress enact legislation providing for post-grant review of patentability determinations covering a range of issues, presided over by an administrative patent judge, allowing cross-examination of witnesses, and permitting limited discovery.⁸⁰

A number of other authors in this symposium address post-grant review procedures, so I will keep my comments on this proposal brief. Perhaps most important, as explained by Joseph Farrell and Robert Merges, there is no reason in general to expect that the incentives of private parties to challenge issued patents—either through an opposition process or

76. Indeed, in an influential paper, Mark Lemley argues persuasively that the optimal system cannot involve a detailed look at each patent application but rather must involve taking a closer and more costly look at patents that prove to be commercially important and disputed. See Lemley, *supra* note 2.

77. See FTC EXECUTIVE SUMMARY, *supra* note 31, at 7, reprinted in 19 BERKELEY TECH. L.J. 861, 869 (2004) (FTC recommendation 1); NAS STUDY, *supra* note 6, at 5 (NAS recommendation 2).

78. See, e.g., *Symposium Transcript*, *supra* note 7, at 1137-38 (remarks by Ron Myrick, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP and U.S. Council for International Business); *id.* at 1138 (remarks by Bart Eppenauer, Microsoft Corporation).

79. See generally *id.* at 1134-40.

80. FTC EXECUTIVE SUMMARY, *supra* note 31, at 7-8, reprinted in 19 BERKELEY TECH. L.J. 861, 869-70 (2004).

through litigation—line up well with the social incentives.⁸¹ Worse yet, as pointed out by several panelists, a firm that pro-actively challenges an issued patent is “painting a big target on its back,” because the challenge signals to the patent holder that the challenger has a major commercial interest in seeing that patent invalidated.⁸² Therefore, any system that places great weight on such private challenges may run into serious problems. One solution might be to enable a public entity to bring challenges to issued patents, presumably based on input from interested private parties. That public entity would need to know enough about technology to challenge those patents most likely to be found invalid, and enough about markets to challenge those patents with the greatest commercial significance.

Such “patent busting” efforts could also arise in the private sector if groups of firms shared the expense of challenging certain patents, or if public interest groups took on this role. Given the benefits to consumers and competition when invalid patents are struck down, relying on dual public and private action to challenge patents seems highly desirable, much as we have dual enforcement of the antitrust laws. The Electronic Frontier Foundation and the Public Patent Foundation have begun efforts to file administrative challenges to some patents.⁸³ The antitrust authorities could reduce some potential barriers to private sector activity in this area by making it clear that cooperative efforts to challenge patents will generally not be considered illegal collusion, even when such efforts involve horizontal rivals who are seeking to pay less for a technological input, or license.

One of the most important dimensions of any opposition procedure is the *time period* during which it is available to would-be challengers. The FTC recommends “limitations be established to protect against undue delay in requesting post-grant review.”⁸⁴ The industry panel was divided on this issue. Some favored a relatively short window, such as nine months from the date of patent issuance, during which such oppositions could be

81. See Farrell & Merges, *supra* note 58, at 951-60 (discussing the various incentives to challenge patents).

82. See *Symposium Transcript*, *supra* note 7, at 1138 (remarks by Ron Myrick, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP and U.S. Council for International Business); *id.* at 1138 (remarks by Bart Eppenauer, Microsoft Corporation); *id.* at 1139 (remarks by David Simon, Intel Corporation).

83. See, e.g., Ian Austen, *Claiming a Threat to Innovation, Group Seeks to Overturn 10 Patents*, N.Y. TIMES, July 5, 2004, at C4; Peter Galli, *Microsoft's FAT Patent Under Review*, EXTREME TECH.COM, June 14, 2004.

84. FTC REPORT, *supra* note 5, ch. 5, at 24.

initiated.⁸⁵ Others suggested that patents be subject to such opposition during their entire lifetime, at least by a third party who has reason to believe that the patent will soon be asserted against it by the patent holder.⁸⁶ A number of company representatives voiced concern that they may be quite unaware when a patent is issued that it can or will later be asserted against their products.⁸⁷ The counterargument was that patent holders, especially in the pharmaceutical and biotech industries, value some assurance that their patent will endure, so they can make the necessary investments to exploit the patented technology.⁸⁸

There seem to be real advantages of permitting third parties to initiate the patent opposition process any time during the lifetime of the patent. If the patent holder requires more certainty that its patent will withstand such a challenge, the patent holder could itself ask for the more thorough review early in the lifetime of the patent. The NAS Study states, "Nearly one-half of *ex parte* reexaminations are brought by patent owners seeking to strengthen at least a portion of their own rights with or without a narrowing amendment because some prior art has come to light."⁸⁹ Effectively, patent holders could self-select: those who are more confident, or who most value reducing uncertainty about the strength of their own patent, could voluntarily undergo a more thorough examination at any early date, knowing that third parties would not then be able to initiate such a process themselves at a later date. Thus, relying on self-selection could be an effective, incentive-compatible way to tailor the patent system to different industries, even if the USPTO itself lacks the information necessary to implement technology-specific policies.

85. See, e.g., *Symposium Transcript*, *supra* note 7, at 1134 (remarks by Robert Safford, Pattishall, McAuliffe, Newbury, Hilliard and Geraldson and ABA Intellectual Property Section); *id.* at 1135 (remarks by Gary Griswold, American Intellectual Property Law Association).

86. See, e.g., *id.* at 1135 (remarks by Herb Wamsley, Intellectual Property Owners); *id.* at 1136 (remarks by Jeffrey Kusham, Sidley Austin Brown & Wood and BIO).

87. See, e.g., *id.* at 1138 (remarks by Ron Myrick, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP and U.S. Council for International Business); *id.* at 1140 (remarks by Gary Griswold, American Intellectual Property Law Association).

88. See *id.* at 1136-37 (remarks by Jeffrey Kusham, Sidley Austin Brown & Wood and BIO); *id.* at 1139 (remarks by David Simon, Intel Corporation).

89. NAS STUDY, *supra* note 6, at 122.

VIII. FTC AND NAS PROPOSALS REGARDING PATENT LITIGATION

Finally, I consider several proposals directed at the third stage in the lifetime of a patent application, namely actual or potential patent litigation. Of course, only a small fraction of patents are actually litigated, but the litigation process is crucial for the operation of the entire patent system because (1) the litigated patents tend to be those of the greatest commercial significance, and (2) licensing agreements and other settlements take place in the shadow of litigation, so the influence of the rules of litigation reaches far beyond the cases actually litigated.

A. Validity Challenges Based on a “Preponderance of the Evidence” (FTC Recommendation 2)

Perhaps the most far-reaching proposal by the FTC calls for Congress to enact legislation that would specify the use of a “preponderance of the evidence” standard, replacing the current standard that requires “clear and convincing evidence” that a patent is invalid.⁹⁰ Changing this standard of proof would be very significant, as it would apply to all patents. Most panelists felt that this change would undermine the functioning of the patent system and create added uncertainty.⁹¹ In addition, several other panelists expressed the view that none of the FTC’s proposals would amount to much without this change, especially since it is uncertain whether changing USPTO examination procedures or adding post-grant review procedures will markedly improve patent quality.⁹²

The various FTC proposals interact with each other. Essentially, the FTC has found that the current presumption of validity afforded to litigated patents is too strong, given the USPTO’s very limited review and the lack of any other procedure to weed out questionable patents before litigation. As a result, according to the FTC, even a patent that would not have been issued, had it been subjected to a reasonably careful *de novo* review of prior art, may hold up in court. This gives the holder of such a patent an undeservedly large amount of bargaining power with licensees, harming competition and innovation. However, if the USPTO examination

90. FTC EXECUTIVE SUMMARY, *supra* note 31, at 8, reprinted in 19 BERKELEY TECH L.J. 861, 868 (2004).

91. See *Symposium Transcript*, *supra* note 7, at 1141 (remarks by Robert Sacoff, Pattishall, McAuliffe, Newbury, Hilliard and Geraldson and ABA Intellectual Property Section); *id.* (remarks by Herb Wamsley, Intellectual Property Owners).

92. See *id.* (remarks by Herb Wamsley, Intellectual Property Owners); *id.* at 1142 (remarks by Jeffrey Kusham, Sidley Austin Brown & Wood and BIO); *id.* at 1143 (remarks by Robert Barr, Cisco Systems, Inc.).

process were improved, such as by increasing the time spent reviewing applications in selected industries or by relying on a “second-pair-of-eyes” in more cases or certain industries, then a patent clearing *that* process might deserve a real presumption of validity. Perhaps, then, both for practical and conceptual reasons, this FTC proposal should be held in reserve in case the other proposals prove ineffective at raising patent quality.

B. Prior Use Rights/Continuing Applications (FTC Recommendation 8)

One reason many computer scientists view the patent system as dysfunctional is that a programmer can write software independently and later find that he or she has infringed a patent that was not even issued when the code was written. Thus, three complaints come together with force in the world of computer software: (1) the USPTO lacks a good understanding of prior art, and therefore issues many patents for code that is not “novel”; (2) the USPTO has a very cramped view of what someone with ordinary skill in the art can do, and therefore issuing patents on code that should be considered “obvious”; and (3) once a patent is issued, it can be asserted against code written independently by others, very possibly before the patent was even issued. This last problem can be reduced (and not just for software) through prior user rights.

The FTC proposes to enact legislation that would protect parties from infringement actions based on patent claims first introduced in a continuation or other similar application by creating “intervening or prior user rights.”⁹³ The intended purpose of this proposal is to prevent hold-up problems that can arise, despite the publication of patent applications after eighteen months, because amending claims during the prosecution process can broaden claims beyond those published at eighteen months.⁹⁴ The FTC Report argues that the FTC proposal addresses competitive, hold-up concerns while protecting the legitimate uses of continuing applications.

Congress passed legislation in 1999 creating prior use rights specifically for business method patents.⁹⁵ These rights are only available to those who reduced the business method to practice at least a year before the patent application and used the method before the effective filing date of the patent application. The panelists generally believed that this legislation has worked well, and thus it provides a pilot for the FTC’s expanded

93. FTC EXECUTIVE SUMMARY, *supra* note 31, at 16, *reprinted in* 19 BERKELEY TECH L.J. 861, 879-80 (2004).

94. *Id.* at 14, *reprinted in* 19 BERKELEY TECH. L.J. 861, 879 (2004).

95. First Inventor Defense Act of 1999, 37 C.F.R. § 1.215, <http://www.uspto.gov/web/offices/dcom/olia/aipa/index.htm>.

proposal. The FTC seeks to expand the rights established by Congress in 1999 in three ways: (1) by granting these rights for all patents; (2) by reducing the lead time required to obtain such rights; and (3) by granting such rights to those who make substantial preparation for using a product or process.⁹⁶

My own research supports the concept of prior use rights generally.⁹⁷ In principle, patents are intended to reward inventors for discoveries that would not otherwise have been made. In practice, patents are granted to the first inventor, regardless of whether others made the same discovery independently but later (or even earlier if they kept it secret). When a 20-year patent issues to a party who first made a discovery that was “in the air” and was made independently by someone else shortly thereafter, the private reward far exceeds the social contribution of the inventor. Prior use rights, therefore, provide a way for the patent system to calibrate rewards to inventors’ social contributions, without the need for the USPTO to rely on industry-specific or technology-specific information (for example, by having longer-lived patents in industries where inventions are more valuable, harder to achieve, or less likely to be duplicated by others). Prior use rights also provide valuable incentives for companies and individuals engaged in R&D to focus their efforts in areas *not* pursued by others, for example, in terms of the overall portfolio of R&D products being undertaken. This is highly desirable in terms of maximizing the social return to R&D expenditures, since duplicate discoveries are of limited social value. The panelists uniformly supported the idea of expanded prior use rights.⁹⁸ Between the successful experience with prior use rights from the 1999 legislation, strong economic arguments in favor of prior use rights, and widespread industry support, one can hope that legislation will pass creating expanded prior use rights.

C. **Require Written Notice or Deliberate Copying for Willfulness (FTC Recommendation 9, NAS Recommendation 6)**

The final FTC proposal regarding patent litigation involves willful infringement. Similar ideas are expressed as part of NAS Recommendation 6, to “modify or remove the subjective elements of litigation.”⁹⁹ Many observers believe that patent holders have too much bargaining power in this

96. FTC REPORT, *supra* note 5, ch. 1, at 26-31.

97. Carl Shapiro, *Prior Use Rights in Patent Cases* (manuscript on file with author).

98. See *Symposium Transcript*, *supra* note 7, at 1149 (remarks by Gary Griswold, American Intellectual Property Law Association); *id.* (Robert Sacoff, Pattishall, McAuliffe, Newbury, Hilliard and Geraldson and ABA Intellectual Property Section).

99. NAS STUDY, *supra* note 6, at 6.

area by virtue of their ability to seek treble damages. The FTC proposes to enact legislation that requires either “actual, written notice of infringement from the patentee, or deliberate copying of the patentee’s invention, knowing it to be patented” as a predicate for willful infringement liability.¹⁰⁰

The panel uniformly believed the current willfulness rules badly need reform.¹⁰¹ While this FTC proposal may not be a cure-all for the problems associated with the willful infringement regime, there was general agreement that it was a step in the right direction.¹⁰² A number of panelists took the view that legislation in one specific area, namely the inference of willful infringement when an accused infringer refuses to waive privilege regarding an opinion letter from patent counsel, is premature at this time, at least until the Federal Circuit rules in the *Knorr-Bremse* case.¹⁰³

Requiring written notice of infringement from the patentee may not limit willful infringement claims greatly. What prevents patent holders from broadcasting such notices to large numbers of potential defendants? And what should companies who receive a large volume of such letters do to avoid willful infringement? Those seeking more extensive reforms in this area are advised to look at the broader and more comprehensive set of proposals to deal with willful infringement claims offered by Mark Lemley and Ragesh Tangri in their article, *Ending Patent Law’s Willfulness Game*.¹⁰⁴ The key to their approach is to narrow the definition of willful infringement to those who *develop* a technology with knowledge that it was derived from the patentee. Those who innocently develop products that they later learn may be infringing would not be considered willful infringers just because they later manufacture and sell those products knowing that they *might* be found infringing.

IX. CONCLUSION

The Federal Trade Commission, the National Academies of Science, and many large companies now support some major changes to the U.S. patent system. The FTC has an important and legitimate role to play in protecting competition and consumers from a patent system that many be-

100. FTC REPORT, *supra* note 5, ch. 5, at 31.

101. *See Symposium Transcript, supra* note 7, at 1125 (remarks by Bart Eppenauer, Microsoft Corporation); *id.* at 1128 (remarks by Jay Monahan, eBay Inc.). *See generally id.* at 1149-54.

102. *See id.* at 1151-54.

103. *Knorr-Bremse Systeme Feur Nutzfahrzeuge GmbH v. Dana Corp.*, 344 F.3d 1336 (Fed. Cir. 2003) (granting *en banc* review).

104. Mark A. Lemley & Ragesh K. Tangri, *Ending Patent Law’s Willfulness Game*, 18 BERKELEY TECH. L.J. 1085 (2003).

lieve too often awards exclusive rights without genuine justification in terms of innovation. And the NAS has prepared a very thoughtful study based on a wide-ranging review of relevant research findings.

Certainly, some of the reform proposals are controversial, and even unpopular among intellectual property lawyers. Most notably, FTC Recommendation 2, which proposes enacting legislation that specifies that challenges to patent validity are to be determined on a preponderance of the evidence basis. This proposal seems prompted by widespread concerns about the quality of the patents issued by the USPTO.

Even if one stops short of this controversial FTC recommendation, a number of the other proposals put forward by the FTC and the NAS have a very sound economic basis and have received widespread support. In particular, both the FTC and the NAS recommend that Congress seriously consider legislation to establish a new administrative procedure to allow post-grant review of and opposition to patents. In principle, such a post-grant review process can effectively and efficiently focus resources on patents that are both questionable and commercially significant. Further, the FTC and the NAS also favor: strengthening the USPTO with additional resources and instituting reforms at the USPTO to improve patent quality, publishing all patent applications after eighteen months, and restricting the ability of patent holders to obtain treble damages for willful infringement. The FTC also recommends extending prior user rights. All of these recommendations were well received at the Ideas Into Action conference in April, 2004.

Perhaps the stars are aligned to enable in the near future some significant reforms to the patent system that reflect new learning as well as the changing, and growing, role of patents in our economy.

REMARKS ON PATENT REFORM: REACTION FROM THE JUDICIARY

By Judge Ronald M. Whyte[†]

Good afternoon, everyone. I was asked to give the bench's reaction to some of the proposed reforms that have been suggested by the FTC and others, so I thought I should begin my task or assignment by sending out an e-mail to my colleagues and asking them for input. What I did was I sent them a two and a half page summary of the Executive Summary of the [FTC] Report, and referred them to the 315-page report that was on the Web. I thought it would be useful to give some of the responses that I received. I got a high percentage of returns from my colleagues, and let me start by reading a few of the more insightful ones.

The first one I received was only two words: "Good grief."

Then, from someone—well, I will just read it: "The meaningful reform would be the elimination of jurisdiction for the District Court in patent litigation. And quote me on that." I won't give you the author, but his brother is on the Supreme Court.

"I have a few suggestions you may want to seriously consider: require patent litigators to wear boxing gloves, allow courts to charge patent attorneys an hourly fee for Markman hearings."

And the final insightful one I will read to you says: "These patent cases involve more acrimony than any other category of cases which I have, including an actual fistfight in a deposition."

Well, that gives you a little flavor of some views.

Let me now turn to a little more substantive comments. These comments are somewhat the comments of the judges that I surveyed with a sort of heavy gloss of some of my own thoughts. I would say it would be fair to rule, or say, that the judges in general affirm the FTC recommendations. I think they felt [the recommendations] were well thought out, and generally made a lot of sense.

I would like to comment briefly on some observations about the patent system from the court standpoint and perhaps with a gloss, as I say, of my own. I have essentially three points. One is that too many patents are is-

[†] Federal District Judge for the United States Federal District Court, Northern District of California. This is an edited transcript of Judge Whyte's address on April 16, 2004, at the symposium on *Ideas into Action: Implementing Reform of the Patent System*, in Berkeley, California.

sued. Whether the figure is 98 percent—which shocked me—or only 74 percent, it seems to me that that—maybe it is too strong a word—is absurd. It almost reminds me of the Emperor’s New Clothes: if you are in the system, you look and you say, “Well, that is the way it goes, that is okay.”

If you step back—and some of us like myself, when I became a federal judge, I had absolutely no experience in intellectual property or patent law—I think the most shocking thing I learned after I had been on the bench for a while was that the percentage of patents that are applied for actually end up being issued. I teach an extern course at Santa Clara Law School, [and] I have asked the extern class what percentage of patents that are applied for do you think are issued. I have had high school students into the court and I have asked them [the same thing]. Their perception or belief is, “Gee, it would be a very small percent of applications that are issued because a patent is an invention, and inventions just do not come along every day.” I kind of agree with that, and it seems to me we have got a system that needs a real look as to trying to change so that we really have an invention when we issue a patent. I think there are some ways that this might occur, one obviously is that the PTO change its approach. That is difficult to do, but it seems to me that an examiner’s attitude, particularly if we continue with this *ex parte* process, has got to be courteous, but very skeptical of any application.

Also, it seems to me that the FTC’s proposal for a post-issue reexamination procedure—and I understand Professor Merges is writing an article on this—has appeal, but I was curious. I did not see much discussion in it as to the effect on a later infringement validity lawsuit between two private parties, what effect the post-issue reexamination procedure would have. If we are talking about something that would have some sort of *Chevron* deference, in other words, essentially the district court would get out of the business of reviewing validity decisions, that might make some sense. Then other questions that were raised in my mind is, well, would there be some sort of exhaustion requirement if you are challenging validity? Would you have to exhaust, or at least try to exhaust, this post-issuance reexamination procedure? If such a system would eliminate or lessen later litigation, I think it makes some sense. If, on the other hand, we ended up with a system that just added an administrative layer to the process, I think that would be bad. So I think the idea is a good one, but there are some unanswered questions, at least in my mind, and I think my view there is consistent with those of some of the other judges.

Secondly, is with respect to the presumption of validity and the clear and convincing evidence standard with respect to validity determinations.

I think now, to some extent, and a little bit depends on the court you are in, that the existing law is kind of a double whammy against the party challenging the patent because if you instruct a jury that a patent is presumed to be valid and has got to be proved invalid by clear and convincing evidence, you really are suggesting there are two things: 1) there is the clear and convincing evidence standard, and then 2) there is also a presumption of validity. It seems to me, really, what the presumption of validity is, is a mechanism for shifting or explaining the burden of proof. So at least if we had a current system, I think it should be made clear. I think in most model instructions now, the committees that have prepared those instructions have gone the route that says something along the lines that since the patent was issued by the Patent Office, the burden of showing invalidity is clear and convincing evidence, but says nothing about a presumption because a presumption itself really is not evidence.

It also seems to me that if we do not change whole-heartedly the burden of truth to a presumption of validity, as opposed to clear and convincing standard, there ought to be made clear a distinction between what deference is given to the Patent Office's decision based on what the Patent Office had before it. For example, if an applicant disclosed certain references and pointed out the argument against patentability and then answered it, it seems to me that applicant should be entitled to some consideration—heavy consideration—if the Patent Office then issues the patent and it is later challenged. Conversely, where the applicant fails to raise certain matters for material prior art, and the file does not show that the examiner ever saw it, then it seems to me that the presumption of validity has little weight or should be given little effect. The fact that if you did have sort of a dual standard along those lines, one of the things it would encourage, or that it would have the effect of encouraging, applicants to do searches, as opposed to now not feeling they have to undertake a search because they might find something that would be harmful.

The willfulness issue is another issue that is a constant concern to the court. It is a real pain, to say it a little more bluntly. There are constantly problems with, well, if you rely on an attorney opinion to defeat willfulness, how much of the attorney-client privilege have you waived? Are trial counsel's notes available? It is just a nightmare. And for those of you who are practitioners or law professors who have studied the issue or anybody that is interested, you will find that the courts are not consistent at all as to how they treat that issue. My reaction to the Federal Trade Commission's recommendation of kind of a bright line rule that willfulness is only available if the patent holder has been given written notice of infringement or there is evidence of direct copying, makes a lot of sense. The only thing I

would add to that is, to the extent that one interprets the law currently as allowing or calling for an adverse inference if you do not have an attorney opinion, I think that law creates a lot more problems than it solves and I think it also risks being a real interference with what is otherwise a pretty highly held privilege, that is, the attorney-client privilege.

The last area that I wanted to speak to just briefly is the question of obviousness. The FTC's recommendation, I think, is an interesting one, and that is that we do away with the need to find a suggestion to combine in the prior art and ascribing to one of ordinary skill in the art an ability to combine or modify prior art that is consistent with the creativity and problem solving skills of someone skilled in the art. I think theoretically that sounds like a good idea, and generally I react favorably to it.

The one concern I do have, though, is it seems to me that gets away from an objective standard and you would be guaranteed in almost every case a battle of experts. I may feel a little more strongly than other judges on this, but I am very skeptical of expert witnesses. That is one reason I don't like the willfulness issue as it now exists. I think attorneys are good advocates and you develop cadres of attorneys that are basically paid advocates; I do not want to say somebody that is paid will say anything, but I think I found when we were dealing with the willfulness issues, it was a common practice to have a patent law expert testify at trial, and I found those experts to be very much paid advocates, as opposed to someone who was truly independent and giving an honest opinion. So that concerns me. I like the idea, I think obviousness is something that needs to be tightened up, but I do have some question about the practicality of the suggestion that is made by the FTC.

One concern I do have about tightening up obviousness, though, is if we do that, does that mean that we are going to get rid of the patents such as the one for swinging by pulling the chains on the swing in different directions, the method for swinging? Or the method for picking up a box without bending your back and only bending your legs? Or, my favorite, the method of painting using a baby's butt, dipping it in paint and stamping it on a canvas? If we tighten it up too much, we are going to lose a lot of our humor.

In summary, I think the majority opinion of the judges is that the FTC's recommendations should be affirmed. There is a dissent that says reverse with directions to include a recommendation that district court jurisdiction over patent disputes be abolished.

Thank you.

EDITED & EXCERPTED TRANSCRIPT OF THE SYMPOSIUM ON IDEAS INTO ACTION: IMPLEMENTING REFORM OF THE PATENT SYSTEM

ABSTRACT

On April 16, 2004, the Berkeley Center for Law and Technology and the *Berkeley Technology Law Journal*, together with the Federal Trade Commission and the National Academy of Sciences, presented a symposium on Implementing Reform of the Patent System. The following is an edited and excerpted version of the transcript from all of the conference panel discussions. Full transcripts are available at <http://www.law.berkeley.edu/institutes/bclt/patentreform/schedule.html> (last visited Aug. 12, 2004) and at <http://www.ftc.gov/ftc/workshops.htm> (last visited Aug. 14, 2004).

TABLE OF CONTENTS

I. OPENING REMARKS	1053
II. NONOBVIOUSNESS PANEL	1058
III. OPPOSITION AND POST-GRANT REVIEW PANEL	1081
IV. LITIGATION PANEL (INCLUDING PRESUMPTION OF VALIDITY)	1100
V. INDUSTRY/INSTITUTIONAL ISSUES PANEL	1122
VI. CONCLUDING REMARKS	1154

I. OPENING REMARKS

Panel:

Robert Merges, Boalt Hall School of Law, University of California, Berkeley

Mark Myers, National Academy of Sciences and Xerox Corporation

Mozelle Thompson, Commissioner, Federal Trade Commission

MERGES: I think it is probably time to get started here. We have had our April sprinkles, so we are all woken up and ready to go onto the substantive part of the program. I just want to welcome everybody back on behalf of the Berkeley Center for Law and Technology and U.C. Berkeley generally, plus all of our many co-sponsors. Thanks for coming out.

Today is the substantive part of the program. We are going to dig into some details from the Federal Trade Commission Report. And now that the press has gone off to file their stories from yesterday, we might actu-

ally hear some more meat and potatoes on the National Academy of Sciences Report, too, I am told. So today is going to be a real good day.

For those of us who used to teach patent law courses to rooms not so full of 12 or 16 somewhat desultory students, it is always kind of mind [boggling] to realize that patent reform and patent law generally has gotten to be such a hot topic.

.....

... [L]et me turn it over to Mark Myers who has promised some real substantive comments for us this morning. Thank you.

MYERS: I am Mark Myers. I was Co-Chair of the National Academy of Sciences' study with respect to intellectual property, which we have named *The Patent System for the 21st Century*. This study was carried under the Science Technology Economic Policy Board of the National Research Council, which looks at issues of technology, economics, and policy.

... [B]asically over the last fifty years there has been a significant and continuing strengthening of the patent processes within the United States and the world. You have had patenting extended to new technologies in the biotech area; patenting extended to technologies that previously were not subject to this form of intellectual property, such as software; the encouraging emergence of new players, universities and public research institutions; strengthening of the position of patent holders versus alleged infringers; relaxed antitrust constraints on patent use; and the extended reach of patenting upstream into scientific tools, materials, and discoveries. So this has been a fifty year period of greatly enhancing the patent system. But it has created strains. Patents are being more zealously sought and aggressively enforced, the volume is increasing, the cost is increasing, and the benefits of a patent stimulating innovation varies considerably across different parts of the industrial sector.

In fact, as we undertook the study four years ago, there are several of the members of this study that [are] within the group. We basically are a committee composed of economists, scientists, engineers, inventors, business majors, legal scholars, as well as practitioners with a great variety of experience.

The first phase was defining the problem and then a second phase was defining solutions. But to define the solutions, we carried out nine areas of contracted research. That research is available, it has been published, published about a year ago, and it deals with patent quality and examination: two studies, patent challenges in Europe and the United States; two stud-

ies, litigation; two studies, patenting software, patenting internet business methods; and licensing and biotech.

The focus of our study was restricted to looking at the patent system, particularly with respect to issues of backlog and the productivity of the system, as well as two problem areas which were in biotech and business practice patents. We looked at the patent system really through the lens of seven criteria that we desire as we go forward: a patent system that can accommodate new technologies with flexibility; a system that rewards only inventors that meet the statutory tests of novelty, utility and meet the obviousness standard; a patent system that is effective at disseminating information; administrative and judicial decisions [that] are timely and at reasonable cost; access to patented technologies, [which] is important to basic research; and the development of cumulative technologies.

Greater integration or reciprocity is needed among three major patent systems—that is, Japan, the United States, and Europe—to increase the overall productivity and reduce the transaction costs. And there should be a level playing field [where] all holders of patents are subject to the same benefits and constraints in all jurisdictions.

So, we have seven recommendations. These recommendations will formally be announced next Monday [April 19, 2004]. The documents are being shipped today for those who are expecting to receive it. The seven that we are recommending [are]: preserve an open-ended, unitary, flexible patent system—I will say more about that; reinvigorate the nonobvious standard—you have a panel with respect to that today and that discussion is an important one; institute an open review procedure—another panel that is being held today and an important discussion; strengthen the U.S. Patent Office resources; shield some research uses of patents from liability and infringement; modify or remove the subjective elements of litigation; and reduce redundancies and inconsistencies among national patent systems.

I will just make a few remarks about some of the key areas of this.

Preserve an open-ended, unitary patent system [that is] flexible. As one thinks about approaching the area of remedy of issues, there is . . . legislating. But there is also working within the procedures with the Patent Office and the judicial system itself, and there are some advantages, significant advantages, of making the changes through the work processes of the Patent Offices and the precedents of the judicial system because legislation is a much less flexible way to work. So, we make a number of recommendations in that area.

Reinvigorate the nonobvious standard. We have considered the nonobvious standard extremely important [and] we believe that there has been some lowering of the bar of that standard. It is a hard issue to deal with; in business method patents, which we have a concern in that area, there are different solutions than one would consider in biotech. And so approaching this is probably going to require remedies very specific to the technology area.

A key area with respect to our recommendations is to institute an open review procedure. We looked, as I indicated in our studies, intensively at the European system. . . . We feel a third party initiated review that can challenge a patent under any standards in the USPTO, and that the outcome of that would be confirmation, cancellation, or amendment of any claim. Or, we envision the courts, the district courts or the court of appeal, could also refer validity questions to such a body, and then there would be an appeal process to the Board of Patent Appeals and to the Federal Circuit. One of our studies with respect to the economics of such a system finds significant social welfare economically that such a system would bring compared to our current legal processes and, if properly designed—and I do not believe such a system has been properly designed—there [are] great opportunities.

I think given the time, I am not going to go further into the strengthening of the USPTO other than we need to address the issue of adequate compensation for examiners, as well as adequate numbers of examiners. But also, there are significant investments in electronic file processing and database searches that need to be funded and supported.

It would be impossible for the National Academy not to remark on protecting the interest of basic research, and we feel that the *Madey-Duke* decision creates a cloud that needs to be addressed, and that there are both legislative and administrative actions, strategies, that could be considered to remove that cloud.

And the final two that I will just mention is that we believe in an overall tone of making a more productive, efficient system, that we need to remove those processes that are not really contributing to the working of the system. That is why we propose removing the subjective elements of litigation which would include best mode, willful infringement, and that would help, also, with respect to some of the organization issues.

And, finally, with respect to harmonization, that there are issues that we feel need trilateral, bilateral negotiations between the major patent systems—that is, Europe, United States, and Japan. The issues for harmonization would be: application priority; of course a grace period for filing [an application after publication]; best mode [requirement in the U.S.; and the]

U.S. exception to the rule of publication [of patent applications after eighteen months]. I think those are manageable. The issue of business practice patents for Europeans will be a harder problem to resolve. I am not implying that others will be easy, but that one would be more intractable. That, I think, is a quick run-over.

MERGES: Now we know what to look for when we get our NAS reports in the mail. Let me now quickly introduce Commissioner Mozelle Thompson from the FTC, again, for a couple of quick comments so we can get going on our panel. Thank you.

THOMPSON: Good morning. . . . Well, it is good to see all of you here today and you must be all very committed to the idea of patent reform.

The Commission has been looking at the subject of technology and competition and innovation for quite a long time. Yesterday at our press conference, I mentioned that one of the most critical issues facing us in America is how we maintain our position as a world leader in innovation because innovation has played a central role in economic growth in the United States and providing consumers with products and services that are of the highest quality, the greatest variety, and lowest cost.

I also noted that no one knows that better than the people here in Northern California who have witnessed the impact of innovation and the transformational effects it has. And so, it was appropriate for us to come here almost two years ago to conduct hearings and meet with industry that was based out here to talk about competition and intellectual property. It is similarly fitting that we come back here now that we have issued a report that makes certain recommendations about patents. That report provides a variety of perspectives about the goals and policies behind patent law and competition and their interaction, and how we might be able to do better in supporting the future of innovation.

Now, how many people here are from industry? And how many people here are from academia? And how many people here are just looking for a way to make money off either, no, are here to advise others as to how they should think about the future of patents? Okay. I think that is a pretty big deal. I think that is a pretty big deal because, collectively, you are all sitting here at this event, in what I think is going to be a watershed event: to talk about what the future of innovation is going to look like. Those opportunities do not occur very often, and a group of people like this one actually do not sit together and talk about it very often. So, it is your opportunity to give voice to perspectives that, frankly, do not often get aired and especially do not get heard very often in Washington, D.C., where we are

charged with looking at policy, and have to look at what the future is going to be.

I am happy to participate, to see you all here talking about the details of our report. It does give us a chance, perhaps, to take a step back and think about this important opportunity that we have, because many of you are stakeholders. You have a stake in what the future outcome is going to be, and to the extent this year represents the beginning of a critical mass, especially out here on the cutting edge of innovation, I am very happy to see you.

So I can tell you that the Commission itself will continue to be committed to this area. We are happy to provide at least an initial framework for discussion, and I hope at the end of the day to be able to talk about some of the observations that we may be able to make collectively. Thank you very much and we will see you throughout the day.

II. NONOBVIOUSNESS PANEL

Panel:

Mark Lemley, Boalt Hall School of Law, University of California, Berkeley (moderator)

John Barton, Stanford University Law School

Q. Todd Dickinson, General Electric (former Director, U.S. Patent & Trademark Office)

Rochelle Dreyfuss, New York University Law School

Rebecca Eisenberg, University of Michigan Law School

Ron Laurie, Inflexion Point Strategy, LLC

LEMLEY: We have a distinguished panel. We are going to hear from Professor Rochelle Dreyfuss at NYU; from Todd Dickinson who, for the next week or so, is at Howrey Simon Arnold White, and will then become IP counsel at General Electric; Professor John Barton at Stanford University; and, finally, from Ron Laurie at Inflexion Point Strategy. Everybody is going to talk for a very brief period of time to enable us to have some conversations among the panel and then some conversations with all of you.

EISENBERG: Thank you very much. I found this FTC report very interesting. I look forward very much to reading the National Academy's report.

In wading through some of the testimony in the powerpoint slides and all of the wonderful resources from the FTC study that were up on the

web, I was struck by the widespread perception in various quarters that the nonobviousness standard has been falling, has been dropping, that it is not therefore doing the job that it had been doing in the past of separating out the wheat from the chaff, of distinguishing those inventions that need the incentive of a patent in order to be culled forth from those that are likely to be forthcoming in short order in any event because they [such forthcoming patents] are the low-lying fruit in the particular art, something that is within easy reach of ordinary practitioners. I began reading through the cases in chronological order and the picture that emerged was of the sort of systematic marginalization over time of the views of the person having ordinary skill in the art to the point of irrelevance, really, in recent decisions. This is very different than what you would expect from looking at the language of the statute. . . . Now, reading that language, it sounds like the person having ordinary skill in the art is the ultimate determinant of what gets a patent. . . . It seems to call for an examination of what the invention would have looked like at the time it was made to the inventor's contemporary peers in the technological community.

But this poses, of course, a couple of administrative difficulties in implementing such a standard. First is the time frame. This is a difficulty that has been much remarked upon by the courts, particularly the Federal Circuit, which is constantly admonishing the examiners to avoid falling into the hindsight trap. . . . The second difficulty, though, is the one that I am concerned with, and one that has been ignored, which is how do you bring to bear upon these determinations the perspective of a person having ordinary skill in the art if the standard is administered and reviewed by people who do not have ordinary skill in the art? The Federal Circuit, again, has been obsessed with the first difficulty, but has virtually ignored the second difficulty. When it speaks of the second difficulty, of the difficulty of discerning the perspective of a person having ordinary skill in the art, it conflates the two issues. It says the reason that we look to the level of ordinary skill in the art is to avoid hindsight, when in fact it is a really different problem, and it is a problem that points in the other direction. . . . The worry with hindsight is the bar will be set too high, the worry with the PHOSITA problem is that the bar will be set too low.

Now, the Supreme Court in its decision in *Graham v. John Deere* listed level of skill as one of the basic factual inquiries that needs to be determined en route to evaluating the obviousness of the invention. But the Supreme Court never actually used that standard in any way—used that skill level in any way—in figuring out whether the particular invention before it was patentable. That was true in other cases as well. [The Supreme Court] would point to a level of skill as the statute required them

to do, as something you have got to determine, but then once they determined that, they would set it aside and they would look at the prior art and they would do their own evaluation of whether the differences between the prior art and the invention were obvious or not. The lower courts have done the same thing. . . . So instead they [courts] all focus instead on the prior art references, the written record of prior art, and what it reveals. The person having ordinary skill in the art is consulted as a reader of references, rather than as an evaluator of obviousness. So they will refer to the skill level, to the training, to discern what the reference would reveal, but not to go beyond that and evaluate whether the invention would have been obvious.

There are a number of reasons, I think, why this has happened. First is what I call the “plodder presumption,” the presumption in the case law that the person having ordinary skill in the art is unimaginative, uncreative, is not an innovator, [and] thinks along conventional lines. This was expressed most starkly from Judge Rich in the case of *Standard Oil v. American Cyanamid* This is, I think, a deeply flawed approach that cannot possibly be right. It seems inconsistent with the statutory language and it seems to be either circular or a downward spiral, more likely a downward spiral because what happens is, if you exclude patentees in determining what is the level of ordinary skill, then you are constantly looking below that level to figure out what ordinary skill is, but then the top of that range, presumably, is patentable. And so then you drop the level down further. You exclude the most innovative of the plodders because they become patentees, so we have kind of a race to the bottom. It sort of inverts the relationship between the person having ordinary skill in the art and the standard of patentability. So rather than PHOSITA setting the standard of patentability, we have the standard of patentability setting a ceiling on the skill level that we are willing to ascribe to PHOSITA. It is just completely inverted. So one fundamental problem is that by presuming that PHOSITA has no capacity to innovate, we have made anything that is different from the prior art appear obvious.

Second move, I think, that has accelerated the marginalization of PHOSITA has been the Federal Circuit taking a strong position that the determination of nonobviousness, that the ultimate determination of nonobviousness, is a question of law subject to plenary review, rather than a question of fact. And, of course, it is a mixed question of law and fact. The standard itself is a legal question, but the application of that standard to the facts of particular cases is something that is essentially a case specific factual determination. They do not see it that way. But if it were seen as a factual determination, then you could consult some person out in the

field there to figure out what it means. If it is a question of law, then the evaluator's judgment does not matter and, in fact, PHOSITA is incapable of determining questions of law. PHOSITA has no skill in the art of law.

Another move has been the elevation of evidence of secondary considerations, or objective evidence [as] the Federal Circuit calls it, [which is] evidence of how the invention was received in the marketplace as bearing on the question of obviousness. If you read the statutory language, it talks only about the technological evaluation of the evidence from the perspective of technological workers of ordinary skill. The so-called secondary evidence, or objective evidence, is all about how customers receive the invention, how it was received in the marketplace, which, again, makes the perspective of customers more relevant than the perspective of technologists.

Another move has been the suggestion test for combining the disclosures in references. If we go back—how old is Winslow Tableau [*In re Winslow*]?—if we go back something like . . . 41 years, we pictured the person having ordinary skill in the arts, sitting at his bench surrounded by prior art references, able to cull together these prior art references with ease in order to innovate. Today, the Federal Circuit insists that there be some sort of explicit showing of motivating suggestion to make the combination. They have retreated somewhat recently, say, allowing combination of references where the nature of the problem seems to call for it. They seem to be retreating somewhat from what, for a time, seemed to be an ever-accelerating trend towards focus on the written record of prior art in determinations of nonobviousness. But, still, the focus is primarily on the disclosures of the prior art, detailed reasoning, and away from the judgment of PHOSITA. And I think this focus on prior art obscures an important dimension that PHOSITA brings to bear upon technological problems, which is tacit knowledge, judgments, insights—the sort of thing that is not articulated in prior art references, things like a sense of whether the equipment is working properly [or things] that somebody who is working in a field would have an intuitive feeling for but you are not going to find that by looking in the text of prior art references.

How to get this tacit knowledge of ordinary practitioners into the system of evaluating claimed inventions is a problem. We have examiners who are skilled, well-trained people, and that is one important source of information and it is a good reason for the Federal Circuit to defer, in my view, to the decisions made in the PTO about obviousness, much more so than they have done. But the examiners are not current practitioners; they are, at best, former practitioners whose tacit knowledge is likely to be dated and atrophying. Litigation experts in the particular patents that mat-

ter most, who argue about the validity of a patent, are another source of input, but they are adversaries, hired guns. There is too much at stake by that point. It is not the sort of process that is likely to yield dispassionate technical appraisal of how an invention looks to real practicing technologists. So, it would be better if we could figure out ways to allow the PTO to consult with outside technological practitioners in making determinations of obviousness, that would allow them to document obviousness in circumstances where the written record of prior art is an inadequate foil for making that judgment. There are certain circumstances where there is particularly likely to be a problem, like with the patent system [getting] into a technology that previously was outside the patent system, like business methods, for example, where the written record of prior art is a very inadequate source of guidance as to what would have been obvious. Now, there are some difficulties in trying to figure out how to do this. Any agency that makes technological determinations faces this problem, and most of them have some sort of mechanism for consulting the views of outside technologists: they will have scientific advisory boards, they will have peer review panels, they will have something in place that will allow them to do that. There are some challenges to bringing those kinds of mechanisms to bear within the PTO.

First of all, there is the extraordinarily broad range of technologies that the PTO addresses. You cannot really have a standing scientific advisory board that would advise PTO across the broad range of inventions that come before it. . . .

Confidentiality is another issue that would stand as an obstacle. We have a statutory requirement of confidentiality for pending patent applications. Even with 18-month publication, you can opt out of that system if you are not applying outside the U.S., so that would be something that would need to be addressed.

Conflict of interest is obviously a serious problem. If you bring ordinary practitioners [to review] the relevant technology in an area where you are making decisions, those people may often be working for competitors of the patent applicant and have a material conflict of interest in the judgment. Some of these issues also plague journal peer review or grant peer review, and I think there are ways of addressing them and managing them.

. . . .

DREYFUSS: We want to thank Pam [Samuelson] and Mark [Lemley] and the Berkeley Center [for Law and Technology] for allowing me to come here. I was a participant in a very small way in the FTC Study and on the NAS Committee, and it is nice to have an opportunity to get some things off my chest.

The first thing I wanted to talk about was confusion, as was talked about at this panel. You see there are really three issues on obviousness, and unless you disaggregate them, people wind up talking past each other. One issue is the way the PTO is implementing the standard. People talk about how the teacher is doing a great job; the examiners are really dedicated. That is terrific and it could be true, but if they are being told the wrong thing to do, then their output is not going to be great. The second thing is about the way the court is interpreting the standard, and what we heard on that was, “the Federal Circuit is still citing Graham against John Deere, what could be wrong?” [But], is citing *John Deere* a great sign? It is close to half a century old, and if it lays out a rule and a methodology that are not suited to modern research, then it is not going to work out very well. Third, people talk about the standard itself and that is really quite a different issue from the other two. So all three issues, they need to be discussed separately.

Let me start with the PTO. I am an academic. I am not the best person to evaluate its current performance. But I will start with the assumption that it is doing the best job under the circumstances. That is a big qualifier. And one issue is funding, and I take Mark [Lemley]’s point, rationale ignorance, as well, that there are diminishing returns to increasing funding. Nonetheless, I suspect that more funds would help.

But, as important, there is a question about the source of the funds and this notion of user-supported PTO. The conflict you hear is about whether some funds should be diverted. I think that is a total red herring. It seems to me the rhetoric of user-support is fine when you are talking about Yosemite and when you are thinking about public parks. And if you want, you can think about examiners as a core of park engineers, or park rangers rather, because they are protecting the public domain. But, the analogy breaks down when you consider the users. At Yosemite, it is the folks who enjoy the public land, but at the PTO, the users are the privatizers, the patent applicants. I would like to see this idea of user support dropped, in part, because it does not necessarily measure the amount of money that would be rational to spend on examination, but mainly because the rhetoric fuels this notion that the PTO is there for the applicants and not for the public. It is also symptomatic of a bigger problem. Although park rangers actually do see loggers from time to time, examiners do not often see the people whose interest they are protecting. And in that connection, I would like to point out some side benefits of the opposition approach. . . . The people who are arguing for the public domain, they are not often seen in current practice, as I said. And it would expose the Office to the effect of its decisions on the public. It would also do something else, and that is it

would create a career ladder that might help retain examiners who would otherwise go off to practice, and there might even be a ladder that would lead to a Federal Circuit appointment, and that would bring to the Federal Circuit the PTO's perspective on what its decisions do. I think that would be good, too.

That brings me to my next concern, and that is the Federal Circuit and how it interprets the standard of obviousness. I remember the days of Monday morning quarterbacking, when the invention was used as a road map for anticipatory prior art, and in that context, I can see why the court did much of what it did. Thomas Edison's paper showed that inventiveness can be about combining known art, and so requiring the examiner to articulate why a person of ordinary skill would think of combining is actually a good thing. As sciences mature, the roots to making certain discoveries become known, but sometimes without making it actually easier to accomplish that result. So the obvious-to-try doctrine is important because it focuses the decision maker on how many alternatives the inventor faces and his actual chances of success. Unlike my colleagues, including the one to my right here [Rebecca Eisenberg], I do see a potential for secondary considerations. If they were seriously combined with a nexus requirement, I think they would help focus the judge on whether the inventor was unique among folks in his field.

But I, too, see reason for concern. The tacit knowledge problem Becky [Eisenberg] just talked about, the obvious-to-try doctrine—it is fine to think about the number of alternatives, but when deciding if a number is a big number or a small number, the role that instrumentation and automatic machinery now plays in research really needs to be considered, and you do not see that very much in the cases.

I also have to agree with Becky [Eisenberg] that in many fields, the level of skill in the art is not only not right, but not much thought about. Perhaps we need a different perspective on collaborative work. Some people have suggested the PHOSITA, the team having ordinary skill in the art, and we need factor in work that is done by instrumentation, as I said. The court is still using the standards of *In re Bell* and *In re Deuel* cases that were decided, work that was done, decades ago. And John Duffey has alerted me to a recent case in which the court introduced the concept of nascent technology where a person of ordinary skill in the art has little or no knowledge. That is *Chiron* against *Genentech*. If nothing else, that is likely to breed a lot of litigation on what nascent is. So there is important work to be done in implementation. And I like Becky [Eisenberg]'s idea of using experts to flesh out some of this, it is certainly an intriguing idea and well worth considering.

But I do have some skepticism. First, who will these outsiders be? I have a hard time getting my head around the idea of the expert on what is ordinary. We could choose ordinary people in the art, but how are we going to choose them, and once they are on a panel of expert people, are they going to continue to think that they are so ordinary? I think about my colleagues and the elitist way in which they talk about people at other law schools, endocrinologists, what do they know? And I have a concern that this expert panel might drive down this standard of what is considered ordinary, rather than driving it up. Also some process questions on how will these experts be utilized. Do you have a standing panel of people? If people get called on a lot of times, I think people tend to find it difficult to serve under those circumstances. If it is an ad hoc committee and one person serves only once, then there is going to be learning curve issue, much like the one that the PTO faces in training its examiners.

I am especially concerned because this approach has been tried and found wanting in other adjudicatory contexts. For example, the FDA has tried it on Boards of Safety and they did one on the safety of Aspartame, the sweetener and, in somebody else's words, I cannot remember who, it was a pig's breakfast. It was hard to find people without any ties to corporations. Many people said that picking the experts effectively picked the results, and scientists showed themselves to have a rather poor understanding of distinguishing between scientific questions and legal questions. Since the FDA tried that, there is an extensive literature now on court appointed experts and how to choose them and how to train them. Maybe that would actually be a useful place to start looking to implement Becky [Eisenberg]'s suggestion, if it was thought to be a good idea. I also think that experts at other points would be good. The NAS report talks about the need to help alert the PTO to emerging technologies so they can start gathering the right literature and staffing the office correctly. Experts might be very helpful on that. I will talk in one more minute about some other areas where experts might help. But, what I suspect is that the true problem actually lies elsewhere. To my mind, it is no accident that the Federal Circuit does not update the level of skill in the art. I think it is happy with a low level of skill in the art because [the Federal Circuit] likes the result of [the level of skill] being low, which is to say, in fact, that [the Federal Circuit] likes narrow patents.

Remember, the PHOSITA standard applies not only to obviousness, but the *Chiron* case I talked about was about what the PHOSITA knows for purposes of enablement. And the less the ordinary artisan knows, the less she is enabled, and the narrower the claim. And I think that is where the Federal Circuit is really going: to a system of narrower claims. It is

clear in other areas, too, the written description cases, their own opinions in *Festo* and *Hilton Davis*, betrayed a certain interest in having very narrow claims. Unfortunately, the court has not actually explained why that is so, so it is hard to evaluate why they want to do that. In part, I suspect the court thinks that if a claim is narrow, it won't be very dangerous, and that means that it won't matter so much if it is not examined right or the level of skill in the art is not properly set. But I wonder if that is really true. I think the court may well be following itself. Narrow claims create lots of work for patent lawyers, but what that actually means is high transaction costs. Patent thickets are a problem that many people on this panel have written about—they create difficult entry barriers [because] if you do not have a patent portfolio to trade when assertions are made, then you are in real trouble. The increased wear and tear on the Patent Office [is] because they exacerbate whatever problems there are because people have to keep filing in order to protect their investment. So I think it is actually foolish to think that narrow patents are less dangerous. Of course, in part, the Federal Circuit may also believe that narrower patents correlate with better notice, but I am skeptical about that too. If you have notice, you need crisp edges to the claim, but what those crisp edges contain, whether it is broad or narrow, that is not so relevant to the question of notice.

I highlight this issue not just to criticize the Federal Circuit on narrowness, but also to demonstrate another point about this concept of PHOSITA. When the court sets the level of skill to accomplish a narrowing function, what it is doing is creating a construct, a social construct to achieve a particular goal. In this sense, PHOSITA is not a snapshot of reality, it is not meant to be a fact-based historical measure of inventiveness. As we see, it does not much mirror what we know about invention or inventors or artisans of ordinary skill in the art. It is a concept that is constructed so that the system does what the court wants it to do. And if we think it is the wrong standard, it is not because we know of specific patents that should never have issued; rather, we think it is wrong for systemic reasons, because systematically we think there are too many patents, transaction costs are too high, etcetera. At the end of the day what, we really need to think about is getting the system to operate in a way that we want it to. We need to think about obviousness for sure, but also the scope of claims that best serves industrial and creative needs, the distance between inventions on the innovation ladder. Should the boundary of one invention touch on the boundary of the next invention—which is the way it works right now? As we have it structured, PHOSITA is key to all of those concerns, but do we really want the same standard of PHOSITA for everything? Maybe we need different standards in there. What should the

standard be for each thing for which PHOSITA is used. For that, a panel of experts could be useful, but I would not use them as retail adjudicators of particular cases, [but] rather wholesale in helping us to think about [how] all the roles, the nonobviousness and the knowledge of persons with ordinary skill in the art, play in creating the system we have, and in creating the system that our modern age and new technologies of research actually require.

DICKINSON: Thank you very much. Let me join the others in certainly thanking Berkeley for hosting today. . . .

So there are interesting and robust debates about what the patent system in particular means today and how we deal with it. [This forum today] is also interesting because traditionally, I think, or at least the last couple major times we had patent reform in this country, starting with the '52 Act, and then the reforms in the 1980s around the CAFC, and most recently in the American Inventors Protection Act, much of that reform was driven by the IP community, the insiders, if you will. And a lot of the discussion we are having here today, at the FTC, at the NAS, the IPO panel on Monday in Washington[, D.C.]. is coming from outsiders, so it is a very interesting and, I think, appropriate debate.

. . . As we have sat here this hour, I am going to guess that the Patent and Trademark Office will have allowed 100 more patents. In the next hour, they will allow another 100 patents, and after that, they will allow another 100 patents. It is not a stream; it is a torrent, and it keeps coming very rapidly. So a lot of what we have to talk about and remember as we talk about the reforms or the issues around obviousness or anything else, is the fact that we are dealing with a very big process which is hard to change. [The process] is susceptible to [change], but that it has a lot of aspects to it and a lot of nuance in it, and that small changes can make big effects, have big effects, and that a lot of unintended consequences certainly and clearly can and sometimes does apply to the PTO.

One of the premises about the FTC Report is that there are questionable patents out there. That is actually the phrase that gets used. I think that probably everyone would agree that there are patents that have issued that should not have, for one reason or another, or that raised a concern of one sort or another. But the challenge, I think, is that we have not come to the place yet where we have really defined what we mean here by questionable patents. And in so doing, I would suggest we are not quite at the place yet where we have the evidentiary back-up to justify, certainly politically justify going to the policy makers and getting the kind of changes that are suggested. I think we need to continue to work there. When we say questionable patents, do we mean the stick patent that issued or wait-

ing-in-line-for-the-toilet-on-the-airplane patent that issued, the ones which people traditionally take a poke at because they sound odd or ridiculous, or why did somebody spend the \$3,000 to get it in the first place? Or do we mean patents like genomic patents which are getting in the way [or] perceived to be getting in the way of research, or a business method patent which maybe just offends somebody's sense of what ought to be patentable in the first place? I am not quite sure. The critique comes from a lot of different aspects and a lot of different places, and so I think we need to be a little more clear about what we mean by questionable patents and why we should reform a system in view of them. How many are there? One of the issues we will get into later today is lowering the standard of review from clear and convincing to preponderance of the evidence. Well, you lower the standard of review for questionable patents, you lower it for all patents, and you make patent portfolios and individual patents less valuable. When you do that, you start to cut into, I think, significantly the intellectual base or the intellectual capital of the country. [That is] not to say it is not justified, but why are we doing it and how many are we doing it for? I still think we need to take some care to define [the standard].

Also, don't forget, the statute basically allows the applicant to get a patent unless it is anticipated or obvious, and you could argue that maybe it should be the other way around, and people do, but that is the current statutory standard. So I think we need, with all due respect to the FTC and to the NAS, I think we need more evidence of this lowering of obviousness that is perceived to be out there. Do I believe it is there viscerally? I think I could make a case in some areas that that is the case. Do I believe that uniformly that is happening, and happening in such a way as to warrant wholesale changes? I think that is a much tougher case to make. I think the evidence for the lowered standard of obviousness is thin at this point. And if we are going to proceed in some of these ways, I think we have to take a lot more time and care and put some more energy into developing it. And we have got great economists and great patent folks who are in a position to develop that. For example, the FTC Report was almost all based on anecdotal evidence. There was very little empirical evidence adduced at all. The NAS did a few more studies on many topics, and I think it backs that up a little bit more.

With regard to the U.S. Patent and Trademark Office, they have traditionally been more conservative, than the courts, traditionally. They have proceeded very cautiously in terms of moving into new subject matter traditionally, and they have been very rigorous, I think, in terms of how they tend to implement the obviousness standard, at least initially. [For example], one of the biggest complaints I often have to deal with in my current

practice is the complaint that folks have that the Office will not allow their case, despite the fact they [the complainants] believe it is clearly allowable, and they cite, they write extensive briefs to back that up. One of the interesting things about the NAS Study is that it is going to use at least two examples, genomics and business method patents, which frankly is about three or four percent of the number of patents issued each year, to drive the change in obviousness. Now whether that should drive that change, at three or four percent, should drive that change or not, we can argue as well. But business method patents have now, because of the second level review, only seventeen percent of them have been getting allowed—only seventeen percent of business method patents in Class 705, on average, get allowed. The bigger complaint from the folks who want those patents is that they are not getting them out of the Office, not that too obvious business method patents are issuing. So I think we have to examine that a little more closely.

I think there are some areas where we ought to look. I proposed two rules that affect this area when I was in the Office. One is what is called Rule 105, . . . [which] allows the examiner to make an inquiry of priority of the applicant on their own initiative. It is relatively underutilized, as I understand, at this point. I think it could certainly stand to be utilized more. It was widely opposed by the intellectual property community, by the patent bar, in particular. But, we held the line on that one and that one became implemented.

I also proposed another rule. It would allow examiners to apply general knowledge that they had. This is a topic of several speakers, it is a topic of general discussion, and I would disagree with Professor Eisenberg to a degree. I think examiners are not these stale Ivory Tower folks who are not keeping up with the art at all. On the contrary, they are on the cutting edge of the art all the time. It is coming across their desk in a steady stream and they deal with the state of the art at this level, of the current state of the art at a very high level. So I think there are opportunities for them to apply general knowledge if they are aware that they are able to now. The CAFC really does not let them do that, they have gone so far—I respect and admire Judge Newman enormously, but she wrote an opinion last year [or two years ago] and went so far as to say that examiners could not even apply common sense to the examination of patent applications, and I think that is really pushing the line a little far. But, having said that, that rule that I proposed was shot down. It was so widely opposed that we had to back off of that rule. With all due respect to the panelists, I do not remember any of them sending a letter and saying that rule was a good idea.

The FTC dealt with obviousness in two particular ways, commercial success and motivation to combine. . . . *Graham* [*v. John Deere*] says that you can use commercial success as support for nonobviousness, and the Report suggests that we may be getting undue balance to that, I think is the phrase. That may be happening in the courts, it certainly does not happen in the Office, frankly, because people do not have a lot of commercial success to bring to the PTO at the time the application is pending, and it is very difficult to get that kind of evidence introduced. So while I take the point that the FTC makes, I do not think it is that big a deal, frankly, in commercial success, though it is not a bad issue to take a look at.

The motivation to combine is a tougher one, principally because the CAFC has continued to push the envelope, I think, on that issue. However, one reason why they do it is that it is awful easy. It is awful easy to apply hindsight once you have got references in front of you. And to have Reference A which has got Element A, B, C, [and] D, which has three more elements, and to say, “Well, look, anybody could have put those three things together, they are in front of me right now, I see it”—that kind of hindsight is easy, and perhaps too easy, and so what I think the CAFC is saying is you need to come up with even more rationale for combining those. Could we change that? Could we tweak that a little bit? Sure, we could. But I am, as most of you know that have heard me speak, more of a calibrator than a wholesale change guy, and so I think that is a calibration.

What the real issue I think—well, let me talk to the peer review thing real quickly. I think that Professor Dreyfuss articulated a number of the problems with it. A peer review panel, for those last 100 patents that we just have issued or the one patent that issued in the last minute I have got here, is a big challenge. I get it if you are going to have peer review panels for genomics, or you are going to have them for very sophisticated technologies. Where is the peer review panel for that largest of classifications in the PTO: golf equipment? Where is the peer review panel for boxes? Where is the peer review panel for what we used to euphemistically call “vermin control,” or mousetraps? They are out there, but getting those folks together for a peer review process is a pretty daunting task. We do do parts of those things. The Office, rather, does parts of those things now. They have for very advanced technologies biotech, business methods, now nanotech. They have quarterly customer partnerships where anybody who wants to can come in and meet with the examiners as a group, they can meet with the senior leadership, there are structured learning that go on, there are seminars that go on. They are very valuable. Also, when a new technology comes along, to the extent they can, the Office—I did it with business methods—tries to draw on those communities to help teach the

Office. We brought in, for example, on business methods, the Securities Industry Association, the Check Cashing Association, the American Banking Association, a number of those organizations, to train examiners both on the art itself and also where to find the art. I think that is a pretty reasonable mechanism to work on.

So where does that lead us? The PTO needs more money. Frankly, the examiners need more time, and that is a function of money. Each hour of additional time across the PTO costs between \$15 and \$18 million, so they need more money. They need greater access to prior art, and they need better search tools. They have great search tools and they need even better search tools. Thanks very much.

BARTON: Let me try to concentrate on a particular example. I think I am pretty much known as a nonobviousness hawk, but I am going to try to give a more balanced picture, if I can, and describe a little bit of what is at stake and sort of the philosophical differences on where you go with different nonobviousness standards.

I am going to concentrate on one of the principles of the CAFC, the principle of obvious to try Obviousness to try, at one point, was a basis for saying, “You can’t get a patent.” In other words, this patent results from a research effort that you suspect is going to lead to an answer to a problem, you undertake the research effort, get the answer, and since it was obvious to try this particular research effort, you should not get a patent. Judge Rich came along and stated as follows, “Slight reflection suggests, we think, that there is usually an element of obviousness to try in any research endeavor, that it is not undertaken with complete blindness, but rather with some semblance of a chance at success, and that patentability determinations based on that as the test would not only be contrary to statute, but result in a marked deterioration of the entire patent system as an incentive to invest in those efforts and attempts, which go by the name of research.” In other words, we want people to do research even though it is obvious to try the research and to encourage them to do the research, we therefore grant a patent.

Interpreting the CAFC’s obviousness to try cases is a nightmare, and they certainly have ended up somewhere in between those two extremes. I think sort of a basic situation of where they are is, you can get the patent in spite of the fact there was obvious to try in their strategy, depending on how likely success looked when you undertook what was going to be obvious to try. Let me apply that to a particular example, the genomic patents. At one time, of course, it was genuinely very difficult to get the sequence of a gene. Today, we can get the sequence of a gene from a machine. We can get an insight—like whether or not a particular mutation is

associated with a particular disease and know what I am thinking—now, particularly if things are like the diagnostic patent, such as the breast cancer patents which have been issued and have been so controversial in many circles from the medical perspective. You know how to do that now. You know now how to run all the things on a chip and run a lot of tests of a lot of people and find out with pretty high confidence. If you put enough money into it, you can design a project to determine what genetic sources are associated with a particular disease. Similarly, and what I put together with the genomic patent system, and that is just my perspective, it is now pretty obvious—again, sometimes very difficult, but pretty obvious how to get the precise structure of a biological crystal, a biological protein. And yet I can now get a patent on the protein coordinates; I can now get a patent on the use of the knowledge that gene sequence is associated with disease Y; I can now get a patent on a gene itself. . . .

In some sense obviousness to try precisely affects the patentability of these categories of information. I do want to put it as information because we are really patenting information in these contexts, and there is an obvious question whether or not this should be patentable subject matter. That is another set of issues which is related to genomic patents, but certainly now that we know how to get these sequences by an automatic mechanical process—I am overstating a little bit, of course—are they not obvious to try? And the CAFC has, in effect, told us no. It is obvious to try a particular research direction, but knowing how to do the research direction does not tell you the shape of the protein, does not tell you the sequence of the gene, therefore it is not obvious what the result of that research project is going to be. So this is a case in which the obviousness to try principal is one which the CAFC tells us to use, and you can see Judge Rich is looking for it, [and] it is one of the reasons why we issue patents which, in some people's minds, raise some questions.

Now, I promised to give you a balanced perspective. Currently, because I read so much about this set of patents and I have written much about it, I also want to understand the industry, so I am trying to investigate the diagnostic genomic industry, understand better how it works, and understand better the role of patents in that industry. It is becoming abundantly clear to me that a large amount of money is being invested as a result of the fact, almost certainly as a result of the fact, that patents are available. In other words, the patent system is in this context serving its role of providing an incentive to investment. Just as Judge Rich suggested, the patent system is serving its role as an incentive to carry out research, even if you know the research is going to automatically succeed. We are then faced—and this is sort of the dilemma I want to put you with—if we

accept Judge Rich's perspective with the obviousness to try arrangement, then we are going in the genomic context to say, "We grant these patents because there is a genuine incentive factor there, and it is genuinely working." And we face the cost, the cost being it is very hard for Affymetrix to put together a chip which scans for all the different genomic mutations which a baby might have because they have to go back and get a license from a zillion different companies in order to produce that chip. Similarly, it is very hard for a pharmaceutical company to work with drugs against a protein crystal X . . . because somebody has a patent on the use of those coordinates and theoretically the company could simply go out and measure them.

We are indeed creating some incentives and we are also creating a set of complications. If I broaden that to industry, in general, what Judge Rich is saying is, "We want a system which rewards routine research and encourages routine research because it is good." And he is absolutely right. But the counter-argument is, "Don't I want to preserve the monopoly, the patent system, for those cases in which the research level is a little bit above sort of the normal level of research in the industry?" If I am going to reward sort of the normal process of industrial innovation, if I am going to reward that with patents, . . . then I am going to increase the number of patents and I am going to create significant problems of having to negotiate cross-licenses and all that kind of stuff.

So I want to suggest what the tensions are here. . . . My bias would be the CAFC is currently saying the standard is whether the invention would certainly have been made by a person of minimal skill in the art who was unable to integrate the different concepts present in the art. I would like to turn that into "to grant a patent only if the invention is more substantial than that regularly made by a person of average skill in the art, being funded and supported in a way that is typical in the relevant industry." My proposal as to how to do that is a little bit different from Rochelle [Dreyfuss]'s and Becky [Eisenberg]'s [proposals], but I think that is one of the dimensions we need to be talking about because, there is no question, it is a hard standard to apply. It is a judgment standard in any call, and I think that has a strong tension, given the actual pressures present on the examiners of driving it down, particularly given what the CAFC is saying. But, at least my proposal would be to try to include [in] the patent application, or maybe in some other context, some kind of indication of sort of the way routine innovation is going in this industry. How much do you change the technology from the pentium computer, from the pentium chip to the titanium chip? That is sort of the standard baseline. Does this go above that

baseline or below? Now that is a judgment call, too. But I am wondering if there is a way to get that kind of evidence into the process.

MYERS: Ron [Laurie]?

LAURIE: Thanks, Mark [Myers]. I just wanted to say what a pleasure it is to be on this panel and part of this program. I just wanted to give you a little bit of disclosure on my particular perspective, which I think is different than anyone else up here. I am now operating at the intersection of patents and capital formation in a firm that calls itself an IP Investment Bank, and I can tell you absolutely that patent quality is essential to ensure that financial markets make correct investment decisions in connection with technology. I see this every day. Any uncertainty about the value of a patent creates misallocation of resources in the financial community.

I would like to make just introductory remarks on the “but for” test that is set forth in the Report. I think the “but for” test is a useful contextual construct in many cases, and certainly reflects one of the key policies underlying the patent laws, and that is, of course, the policy of incentive by reward. If the incentive is not necessary to produce the invention and its commercialization, then there is no point in offering the reward. I think, however, there are two other policy bases for the patent laws that the “but for” test does not address. One is the public disclosure or dissemination of technology policy. The “but for” test ignores the possibility that, even though an invention would have been made and commercialized, that in some cases it would have been kept secret. And this, of course, affects a very delicate balance between the patent laws and the trade secret laws. Certainly many, in fact probably most, inventions will be disclosed upon commercialization, but there is a lot that will not, particularly in the software area where past practice was to distribute under confidentiality. The other policy that I do not think “but for” adequately addresses is what I call the “forced improvement policy.” That is the motivation to design around existing patents and thereby advance the technology in ways that would not have happened but for that forced requirement to avoid doing what is claimed in the patent.

With regard to the issues of motivation and commercial success, I absolutely agree with Todd [Dickinson] that the PTO has got it right, there is no lowering of the bar at the PTO in terms of obviousness. The cases that I see being examined, especially in software and business method areas, are, if anything, the PTO taking a very tough position. I would refer you not only to the MPP which applies to all subject matter areas, but particularly to the recently published examination guidelines on obviousness in connection with business method patents. There are, I think, twenty-some examples—fairly detailed examples—of how tacit knowledge and nature of the problem to be solved, and mere conversion, mere automation of a

the problem to be solved, and mere conversion, mere automation of a manual process, and many, many other things that are not explicitly taught in any of the references that are combined, and of how those are folded into the obviousness decision by the Patent Office. To the extent that the Federal Circuit does evidence a trend toward lowering the bar, I have read the cases, [and] I think many of them can be explained on other grounds. I think there is an increasing emphasis on requiring the Patent Office to build a proper administrative record for judicial review, and therefore there is a great antipathy toward what the Federal Circuit calls “conclusory statements of the skill of the art.” I think all that means is that the examiners and the Board of Appeals members have to document the basis for their tacit knowledge, and not just cite it as something they know. I think that is an easy hurdle to get over. For example, in the Internet area, the tacit knowledge that one can perform many business methods that were previously done manually or in a face-to-face manner on the Internet, that is the kind of tacit knowledge that will not ordinarily appear in the references because it is so totally obvious. But, it is not a problem because it is certainly easy to show with any textbook or newspaper article that implementing physical processes on the Internet is well within the tacit knowledge and skill of the art. I also think that the trend, and I will defer to my academic colleagues on the extent to which there is a trend, but a lot of the trend can be explained on the basis of the general concept of what I would call the Federal Circuit’s diversity of opinions. I think, on many issues, you can find opinions all over the place, and I think the more recent case law, the Ruiz/Chance case puts us back on the right road, at least in connection with consideration of the effect of nature of the problem on whether the solution is obvious.

Finally, on commercial success, just a quick note. It seems to me commercial success comes up in two different ways and they ought to be treated differently. The first case is where commercial success is coupled with long felt need. There is kind of a common sense reaction that, if there is a long felt need for a solution, and it is recognized that that solution will be commercially successful—now, keep in mind, that is commercial success measured prior to the invention—the solution is not obvious because making money is something that everybody wants to do and if the need is recognized and the fact that the solution will be commercially rewarding is recognized, and the invention is not forthcoming, that is very strong evidence that it is not obvious. On the other hand, where it is not coupled with long felt need, but where commercial success is just a consequence of the invention, then I absolutely agree with the Report that commercial success could be due to many other things than the invention, and it is en-

tirely proper for the burden to shift to the patent owner to demonstrate clearly that the commercial success is tied to the patented invention—that is in court.

Now, I have a little trouble applying that to the Patent Office and having examiners analyze submissions of commercial success. I mean, the introduction of business method patents caused quite a disruption and a lot of people were saying that now we have to get examiners with a background in computer science that had an MBA from Wharton in order to understand the significance of the business method; ditto in spades if the examiners have to start analyzing and rebutting economic evidence of commercial success. Thank you.

LEMLEY: Let me ask a couple of questions directed to the specific proposals that are before us today and then we will open it up to the floor for questions. The first has to do with the issue of combining references. There has been some discussion of what Ron [Laurie], I think, quite properly points out, as the meandering Federal Circuit case law on the question of whether you must have an actual suggestion in a reference in order to combine it with another reference or whether you can find motivation in some other source. And I guess the question for the panel—Ron [Laurie] talked a little bit about this already—what is right? Is the FTC right here? I mean, are we to be finding motivations to combine references outside the documentary corners of the reference themselves? And, if so, where is it [that] we are going to find it and how? Is it testimony? Is it some base of examiner knowledge?

EISENBERG: This whole approach seems to me to be fiction upon fiction. We start with the fiction that the person having ordinary skill in the art has access to every single reference, sort of the Winslow Tableau [*In re Winslow*] fiction. And then we presume that the person does not know how to combine references unless there is some suggestion or motivation to do that. Another point of inconsistency in the Federal Circuit's decisions is the issue [of] whether we are motivated to combine references—which is this highly artificial question, as if somebody trying to solve a technical problem goes to the library and tries to identify references that will help them—or is the motivation to combine elements. It seems the combining of elements seems like a much more logical way to proceed if the focus is on what can we expect of ordinary artisans in the fullness of time, with or without patent protection. On the other hand, if your focus is more on the prior art references themselves, then you start thinking about whether there is a reference to combine.

Ron [Laurie] had an interesting point about the value of disclosure. It may be that when the prior art references themselves are weak or when the

written record of the state-of-the-art is weak, then there is a stronger interest in using patents to bring about greater disclosure, even though maybe it is not bringing about any greater innovation. So it might look different from that perspective.

LAURIE: Just a quick comment. I absolutely agree with Becky [Eisenberg] because the inquiry is the state of the prior art. And to limit the prior art to what Section 102 refers to as printed publications is absolutely unjustified. Section 102(a) also includes “known or used by others,” “others” meaning the public. That is in many cases the glue that holds the references together, and to ignore that is to ignore the most valuable method for combining references.

DREYFUSS: I think my point is very similar to that one. We over-treat inventions as if they are true monopolies. Judge Rich often said they are not true monopolies for purposes of thinking about what the patentee can or cannot do with this monopoly. But [patents] are also not true monopolies in the sense that there are not other inventions out there that are like that or similar. I think if you look within a field, you see the way that people within the field think, and by taking an invention within sort of the entire scope of inventions that are similar and thinking about why is it that people in the field look at, how do they think about the direction in which they are doing research, you can start seeing trends in the way that people in chemistry think, or trends in the way that people in mechanics think. I think all of that helps. It does not have to be written down. You can see the trends in the way that people think.

LEMLEY: Let me follow-up on this, if I may. So, if we want to look at the sort of general way in which people think in the field, how they might think about combining elements, and if we want to look—as Ron [Laurie] points out—not just at the printed publications but what is going on in the business, the section 102(a) art the public uses, and all of that stuff, and then—we also talked a little bit about secondary considerations, another element of the FTC Report—we want to look at economic evidence, commercial indicators or success, what were people doing, how does the industry react to the invention. All of these are relevant questions for obviousness. They also seem questions that the PTO is going to be essentially unable to deal with, not only given the resource constraints, but also given the way in which we structure the inquiry. The PTO does not have the ability to go out and talk to everybody in the industry, to go out and collect evidence of public use, to go out and collect evidence—economic evidence—of commercial success. Are we necessarily, by focusing the obviousness inquiry on this broader question, are we necessarily relegating

it to the courts and saying the PTO is just not going to be able to do some of the things we want to do in the obviousness inquiry?

DREYFUSS: I think the examiner is doing a lot of that stuff. I mean, that is just Todd [Dickinson]'s point. The examiners are sitting there and they are seeing everything that is in their piece of the world, and so they are seeing each and every inventor as he comes along, telling the PTO what it is that [he is] doing. I think the examiners actually do get a very good sense of what it is that is in the art. And I think Becky [Eisenberg]'s point that we should be deferring more to the examiners, that, to me, has a lot of resonance because that, in fact, that part they do see. They are seeing the way that people think about pushing the frontier slightly forward, making incremental changes. Not to push the NAS Committee Report, but I think the opposition procedure is also a piece of that because it brings people from the outside in the cases in which the examiner has not seen stuff that is in public knowledge, but not in print.

DICKINSON: Mark [Lemley], I have a one word answer to your question: Google. . . . Let me elaborate a little more on that, and not to put too fine a point on it, because it obviously can still be improved, but the PTO has access to some of the world's most extraordinary databases and has very facile tools for accessing those databases. They also have print libraries with research librarians whose whole job is to try to help them dig out that piece of priority. Do they not always get it? Absolutely. Are there opportunities for improvement? Always. But to premise the whole argument on the fact that the PTO's examiners are just sort of sitting around, poking around, and doing a Google search is just not the way it works. We also have another opportunity that gets overlooked. It is another rule we put in place called Rule 99. Because we have publication now at eighteen months—I think most people would support what the FTC Report does, making publication universal—you have got a political challenge there with small inventors, but other than that, if you believe that there is prior art that the Office is not considering, you have an opportunity under Rule 99 to send it in. It is vastly underutilized still. That may be partly structural, but I think part of my job and others' job is to make people aware that that is out there.

MYERS: John [Barton].

MR. BARTON: I just want to add that I view those secondary considerations as mainly applying not for the Patent Office, but when you review the patent later in some kind of litigation. In some sense, to the extent I consider secondary considerations as success in the market, it means I do not know whether the invention was nonobvious until ten years after the patent was issued, and I am in litigation about it.

LEMLEY: Let me push a little bit on this, and then we will open it up to questions from the floor. If the PTO has got all these great databases and they have got this tacit knowledge that comes from looking at all the patented inventions, and the argument here seems—the consensus here seems to be that we owe greater deference to the examiners—why is it that all the empirical evidence seems to suggest they are not doing such a hot job of finding the right references? Why is it that the European and Japanese Patent Offices regularly find prior art references that the U.S. Patent Office misses? But why is it that the courts, when you go into litigation, you always end up litigating prior art references that the Patent Office did not find? It seems to me there is a felt sense that the PTO is not, in fact, finding all the most relevant prior art.

DICKINSON: That is not a bad point with regard to litigation. Do not forget, very few patents actually get litigated, and when they get litigated, enormous resources are brought to bear. I am not a litigator, but my firm, for example, is primarily [made up of] litigators, and they just wheel out the big, big guns. Now, whether that is good thing or bad thing, well, we can debate that, and there are a lot of aspects to that. But when you start to apply \$10, \$15, \$20 million to try to turn up that one piece of invalidating prior art, that is a little different than the \$5,000 search you did or the eighteen hours of searching that is available to the Office. But that is the flex in the system. Can we change that a little bit? Yeah, we could change it a little bit, but I think to decry the whole system because the examiner does not have \$20 million worth of capability to find that one piece of prior art hidden in a library in Russia somewhere, I do not know.

. . . .

FARRELL: Joe Farrell from U.C. Berkeley. Just to follow-up a little bit on that change. I thought Mark [Lemley]'s question was not any blame to the examiner for not finding it, but should we take the view that the examiners do in absolute terms an excellent job?

DREYFUSS: There are really different questions packed into this. One is the question of finding the prior art, but the question we were talking about before is that question of combining it. So, you might want to take the view that examiners are really good at thinking about that because of the fact that they have seen it a lot, see it continuously, see trends within what is going on, and are able to abstract from those trends. That is a different question from whether each piece of prior art that is out there can be seen.

DICKINSON: We have talked about the issue of tacit knowledge, too, and I think we need to give the examiners more leeway to apply tacit

knowledge and what they know to be out there. We can do that, I think, through rulemaking, or we can do it—

DREYFUSS: What they know to be known.

DICKINSON: I think we have much more play in that regard than we should have because, again, the examiners—I came into the Office as a knowledgeable guy, but not really knowing it as thoroughly as being in it—I was amazed at the level of commitment and knowledge that the average examiner tends to have. Are there exceptions? Sure, but it is really a very high level of commitment and knowledge. It was sort of surprising to me. There are over 400 Ph.D. scientists at the Patent and Trademark Offices. It is more than at NIST, it is roughly how many are in NIH. I mean, that is a lot of brain power. And that is not a lot of engineers—those are mostly in genomics and in biotech areas, for example.

DREYFUSS: A third issue is the application of law to the facts that they know. That is another question where, whether or not you give as much deference to the examiners—I just do not know the answer to that question—about how much examiners knows about law and knows about the application of law to facts. But each of those are different issues.

DICKINSON: I was very pleased to put back, on full scholarships to law school, any examiner who wanted to go. It has been cut out in the latest couple of budgets, I am disappointed in that. I think we need to get more legal training. Only four of the twenty-six group directors are lawyers now in the PTO. I believe that is scandalous. I think we need to have much more legal training, as well.

...

LEMLEY: For benefit of the people in the back who are having trouble hearing this, the question is why is it that the EPO regularly finds references that the USPTO [may not].

DICKINSON: How much does Chevron and Texaco pay at the EPO to get a search and examination as opposed to the United States? They pay roughly three times as much. I agree with the general concept, there are many times when it is perceived that [at] the EPO, you can get a higher quality search, in certain technical areas, in particular. Given some challenges they are facing in terms of resourcing and staffing and other things, they have had a freeze on hiring for a long time, I think that that may be a little more differentiable than it may be currently, but I think traditionally the belief was you would get a better search, principally because they have more money, which leads to more time.

[Question from audience member not transcribed.]

BARTON: Obviously, we are skating into the territory of the panel which will discuss the presumption of validity. The question is to what extent must the court accept that presumption, to what extent should we accept the presumption that the examiner did not make any mistake. Then the related question: to what extent should we be installing procedures that are somewhere in between the two, that are designed to test the validity of patents? Or designed to provide, you know, as in the European [Patent] Office procedure, some opportunity for the public to bring additional prior art? And, additionally, counterarguments against the patent because, after all, the patent is necessarily granted, even in Europe, in an *ex parte* proceeding? [The solution] has to be a fairly low cost or it would just be insane.

LAURIE: The fact that the litigation is so many orders of magnitude more expensive than the prosecution, to me, is the best reason why the prosecution ought to be as absolutely good as it possibly can be in order to avoid tremendous misallocation of resources.

LEMLEY: Alright, please join me in thanking the panel.

III. OPPOSITION AND POST-GRANT REVIEW PANEL

Panel:

Robert Merges, Boalt Hall School of Law, University of California, Berkeley (moderator)

Robert Blackburn, Chiron Corporation

Joe Farrell, Economics, University of California, Berkeley

Bronwyn Hall, Economics, University of California, Berkeley

Dietmar Harhoff, University of Munich

Steve Kunin, U.S. Patent & Trademark Office

Douglas Norma, Eli Lilly & Co.

MERGES: We are going to start out with Professor Bronwyn Hall from our own Economics Department here at U.C. Berkeley, and she is going to be joined with her co-author on some very interesting research, Dietmar Harhoff from the University of Munich. So in all the discussion of European oppositions that is thrown back and forth in the U.S. reexamination reform kind of movement, Dietmar has really got the goods. He has got the real data on European oppositions and what they are all about. And following them, we are going to have Bob Blackburn from Chiron Corporation, who is a veteran of many of the biotechnology wars. He has personal experience with the European oppositions and lots of detailed

experience with the U.S. patent system as well. He is the Chief IP Counsel at Chiron, and we are really pleased to have him here. After that will be Joe Farrell, also from our Economics Department, who is presenting a paper that he and I are working on. I may have a few words to say on that in the Question and Answer period, but Joe is mostly going to handle it. Joe is also from the Competition Policy Center and they are a co-sponsor of today's conference. After that will be Doug Norman from Eli Lilly, who also has extensive personal experience with the U.S. patent system, obviously from the pharmaceutical and medical services and processes industry. And batting clean-up is Steve Kunin from the U.S. Patent and Trademark Office. And so, in all the discussion of sort of what the Patent Office is doing, and how examiners are really sort of performing, Steve [Kunin] has got the day-to-day experience on that.

So this is really a terrific panel We will start with Bronwyn [Hall] and then Dietmar [Harhoff].

HALL: There were two things that I wanted to emphasize, just out of my experience with looking at patents. And the number one point to always keep in the back of your head is that patents are extremely heterogeneous in their value, and that means that figures like three percent of patents are not very meaningful, really. . . . It could be that three percent is a completely uninteresting set of patents or it could be that three percent is all of the value in the patent system, and you just have to keep that in the back of your head. I particularly mentioned this with respect to the concern for genome and software and business method patents. It is possible, at least in the genome case, that the reason we are focused on it is because those are valuable patents, even if they are a small number. You just have to keep that in your head when you are thinking about it.

The second thing I want to say—repeat again, [that] which economists are always repeating—is that more patents are not necessarily better for innovation, for a long number of reasons that I do not have time to list right now. Now, the previous panel did a really good job discussing the details of what I will call “patent quality” even though I know that is an over-used and misunderstood term. I wanted to do only one thing, which is report on a couple of numbers which provide evidence on this question, statistical evidence on this question, with respect to the USPTO, keeping in mind that it is not the USPTO's fault that this is the case. I mean, the USPTO has been flooded with patent applications over the last fifteen years. When you look at the aggregate numbers, you can easily identify a structural break that took place using the usual time series technique that took place in 1983-84 where there was just an enormous shift in the growth rate from zero percent a year to five percent a year in applications.

And the budgets have not grown at the same pace, but nevertheless, here are the two facts. The first one is that if you look at U.S. originated patents and non-U.S. originated patents, and how they fare at the European Patent Office, what you find is that the grant rate at the European Patent Office, though it is the same level playing field here, the difference in the grant rates for U.S. originated patents and non-U.S. originated patents has risen in the past twenty years from zero percent difference to sixteen percent. So, U.S. applications are being turned down more often. Now, this does not say anything about the USPTO, this says something about what the expectations of U.S. applicants are, and so that by itself suggests a decline in the standard of U.S. applications. But one cannot help but think that that is not because they are responding to something that is going on in the U.S.

The second fact, and this is directly related to what is going on at the USPTO and it was discussed in the previous panel but I just wanted to give you the fact, which is: suppose you look at U.S. priority patents' equivalents at the EPO. So, we are comparing what the USPTO does with applications for an invention for which there is an equivalent at the EPO, so these are more valuable in principal patents because there are equivalents at the EPO. How do they fare at the EPO versus the USPTO? And the answer is the difference in the grant rates, . . . differences in the grant rates has grown from about twelve percent twenty years ago to thirty percent today. I would argue that there has been some change in the standards being applied either at the EPO (they have raised the standards) or at the USPTO (they have lowered the standards). Could be either one, really, but that is just the overall fact.

. . . [A]t this point, I wanted to talk about the benefits and costs of post-grant patent review, something that we have suggested in the [NAS] Report, something that was discussed in the FTC report, something I saw, in fact, in at least one of the position statements that were in the packet that we received. I want to reinforce this idea that I think there is some value in having a post-grant review within the Patent Office, particularly for new technologies, because of the feedback effects you get from having a review. Having prior art being brought in by outsiders—it is not that the Patent Office does not catch up on its searches—[it] is that it takes a while and [the process] may speed it up a bit; [the Patent Office] may get the information more quickly. . . .

HARHOFF: Well, thanks a lot. Thanks for inviting me to this panel. I feel I am honored and it is a great opportunity to say something about the European experience on post-grant review, which is called Opposition. And let me just hop directly into a summary of empirical facts so that we

know how such an institution could look. This does not mean that I am advising anybody to assume exactly the design perimeters that are here, let us talk about design perimeters later.

This is an *inter partes* procedure. You can file an opposition within nine months after the patent grant. Typically what you find is that it is opponents, rivals, competitors that are opposing the patent-grant. Sometimes you also find that NGOs like the Animal Protection Society of Vienna or Greenpeace or others are doing that, and I will argue that that is probably good that we have such an open process. How about the frequency? If you look at the opposition rate, 7.9 percent of all patents are being opposed at the European Patent Office historically. It has gone down somewhat. And there is a second instance and an appeal against the outcome of opposition, which is realized by 31.7 percent of all the opposition cases, so you can see that the patent holders, but as well the opponents, are really going after this is battle for IP, very clearly, with a high frequency. Germany, by the way, has a similar opposition system and there the opposition rate is even higher. I will later argue that that has to do with the fact that in Germany you only have three months to file, and therefore you do not have time to settle with the possible counterpart you have. What is the duration? Each instance about two years. So it is quite long, adding to the already relatively long grant period/examination period that the European Patent Office has, which is on average 4.2 years for decision making. What are the outcomes? Now this is the really relevant part. About one-third of the patents are revoked; they disappear. And given the structure of the system in Europe, there is no judicial appeal against that once the appeal chamber has said the patent is not there. One other third [are] amended, and that means narrowed—the claims are narrowed. And then, in 27 percent of the cases, the opposition is rejected. The opposition is closed in about seven percent of the cases, which means that either the patent owner dropped the patent, they did not pay the renewal fees, or the opponent dropped the procedure and was never heard of again. What are the costs? Per party, per instance, between 15 and 25,000 Euros; if you go through both instances, it would be between 30 and 50,000 Euros. There is a very low potential for driving up your competitors' costs, and I think that is very important for not making this a harassment institution that can be abused strategically, although some strategic abuse may be going on.

Which cases get to opposition? Now, again, this is very important because we have been talking about what we would like to see in this mechanism, and what you see is that in new technical fields, for example, biotechnology, nano, in fields with uncertainty, with asymmetric information between the patent owner and the opponent, you see a lot of opposi-

tion. When it is high impact patents, like in cosmetics, for example, although it is not an R&D intensive industry, you have high opposition rate, and typically we can show in empirical studies that it is the valuable patents, that typically opposition draws from the upper quarter of the value distribution.

Let me simply summarize that and say that this is a mechanism which has in terms of economics both the quality of screening and of information revelation because what is produced in the procedure here is knowledge about prior art, knowledge about the interpretation of prior art. Many cases do not reveal new prior art, but they deal with the interpretation of prior art, which may be contentious between the parties and, of course, this mechanism identifies high value patents. My interpretation as an economist is very simply that, in a second round, once you have identified these patents, you can give them much more attention than you can in the standard examination process, where maybe you have close to forty hours in the European system, but errors happen nonetheless because not all the information is on the table, even if you have greater resources available than at the USPTO. So there will be errors, even if there are more resources, and you need some kind of mechanism of [dealing with] that.

. . . The European Patent Office examines and grants a patent, and then these patents become national patents because something like a European patent is not really in existence. And subsequent litigation is within the national systems of the judiciary and so forth. In Germany, what you find is when you look at EPO granted patents coming to Germany, there is a subsequent invalidity challenge that you can raise against the patent at any time—this is not time limited—and any party can do this, so this is a mechanism that the United States does not have. It is a quarter of a percent. I can use these data to show you that the real welfare kick out of the system comes from striking down those 2.7, those 7,300 cases, which do not proceed in the system. Their career has ended and they will not cause litigation either. There is also an effect from hardening legally the patents that were under opposition because they withstand validity challenges much better than other patents attacked in this procedure.

Let me say something about the overall litigation rate in Germany. Again, if I did this for Europe as a whole, I would have to go into basements because we do not have electronic archives of litigation files up to now, unfortunately. The litigation rate in Europe, in Germany, that is my calculation, is 0.9 percent. Litigation is less costly in Germany, it is faster in many cases in Germany. Another member of this panel has come out very much in favor of this mechanism, so all of this is speaking against and sort of an inflationary number here. Compare this to the 1.9 percent in

the United States where litigation is more expensive, takes longer, and so forth, I think that this is partly an impact of the opposition system as a pre-screening mechanism that takes out a number of these cases. . . . At the European Patent Office, the case is heard by a special board. There is an issue whether you want the original examiner in there or not. I hear from the EPO that the revocation rate is higher when the original examiner is not part of that board, and that might just be human nature.

Which time period should you allow for filing the case? I would argue make it short. The USPTO Strategic Plan set twelve months. These are twelve months during which there can be settlement between two parties where society at large would not like to see settlement because you do not want to have collusion at this level.

The last point I want to make: I do not think that discovery is very helpful here. You want to make this a low cost mechanism, keep it simple, so that you have the screening function and not sort of an imitation of litigation. Thank you.

BLACKBURN: Good morning, everybody. . . .

Why replace validity litigation? Well, for you litigators out there, I hate to tell you, it is not about you. I know you are saying, "What about me and my needs," but it is about industry. Aim it at the prosecutors and the academics, it is not about you either, it is about industry being able to make, as Ron Laurie put it, make rational capital allocations. So what does industry want first? More than anything out of the patent system, it wants predictability, because if [the outcome] is predictable, [the industry] can negotiate [and] a deal can be struck. In those cases where [the outcome] is not predictable, what [the industry] wants is fast, cheap dispute resolution because that gets you back to predictability.

Why do you want predictability? So you can formulate a rational strategic business plan for what you are trying to do and allocate your capital correctly, whether you license, you go into another area, you do add-on research, whatever. You need a predictable system. But wait a minute. Isn't the American litigation system the best? You are either for it or against it.

Building on Dietmar's talk, I have sort of pulled out a not actually hypothetical example, although I was trying to remember what the numbers were in the middle of the night, so I am not holding these up as precise, but they are pretty close.

Same patent, same issues, litigated three different places, here is what it cost and the time: Germany—\$400,000, 18 months; the U.K.—\$2 million, 18 months, there is discovery in the U.K. The U.S.—\$6-8 million, 30

months, and just got to the Markman hearing. Compare the outcomes. They were identical. The substantive outcome from the business's perspective of all this litigation was the same. How much justice can you afford? The dollars you spend on this dispute resolution system do not go into R&D, do not benefit society in another way. I know, what about me and my needs? But if you can maybe sell this level of litigation and cost if we were in a different market like perfume or Scotch, high price tends to work there. For the same price, for a lower price to get the same results, it should not be selling.

Can we move to an opposition system? Can the PTO actually deal with the validity issues? We have heard some concerns about their ability to deal with things. Usually that comes up with the things like best mode, or inequitable conduct. How would you deal with those? If you have a system where you have different defenses available in an opposition system or you have more additional defenses available in district court litigation than you do in an opposition system, somebody in each dispute is going to want to try to get to district court. But now let us look at other countries like Japan and the EPO countries where they do not have these type of defenses. Sky is not falling, their opposition systems tend to work pretty well and are a substitute for things like the duty of disclosure, etcetera. It works pretty well. The simple solution is [to] get rid of these areas of substantive requirements for patentability in the U.S. like most other industrialized countries who do not seem to require it. Do we eliminate litigation altogether? I do not think anybody is seriously suggesting you eliminate litigation for the liability aspects of an infringement. But perhaps you could eliminate it altogether for validity and adopt something akin to the German model. Or, you could make it an option out of litigation where, say, the district court litigation has stayed and pending resolution, the district court will accept the resolution on validity, and that could include a PTO opposition and a direct appeal to the Federal Circuit, but you gain nothing if you then have a *de novo* review of that process in the district court.

The question is how does that option get exercised. Is it up to the judge, can either party opt for it? Does it take both parties to agree to it? The key thing to get the advantage of an overall cost reduction and time saving in the overall dispute resolution process is that one party in a particular case cannot frustrate access to the opposition system. Because what we can agree to ahead of time is that those of us who are in the marketplace of IP is that we end up on both sides of this, and we can see a net savings. But when we are in a particular dispute, somebody says, "We will have a five percent better advantage, we think," and I will tell you, "I think most of those calculuses are wrong in this form versus that form,"

then you will have a breakdown and there will not be resort to an opposition system and you won't get the advantage of it.

Tig concern, it has been raised: will patentees be harassed in an opposition system? There are lots of ways to deal with this. The first is adopt the time limit like EPO does. Proposals are one year out there. A concern here is, though, what do you do about the invention, in particular you will see this in biotech, [and] its commercial relevance to you, [since the commercial relevance] does not come about for five or ten years, and you never bother to look at this thing to see whether it was truly something worth spending the money in opposition. Maybe the way to do it is that you award costs. That would, I think, go a long way to eliminating harassment and you could say it is in any opposition filed more than a year after the patent is granted, so it truly has to be a rational business decision to bring the opposition and you would as a business person think you have some pretty good grounds to do it. An alternative is to look at some sort of standing requirement, again, perhaps maybe after one year passes. I am a little concerned that it will be anything close to the case or controversy which prevents people getting access to the courts for DJ [declaratory judgment] actions, as they do today, because that has been a real problem in the biopharma industry. You do not have infringement during the Hatch-Waxman Exemption which goes on for years, so there is no reasonable apprehension of suit, yet you are supposed to be investing hundreds of millions of dollars in bringing a product to market, and you cannot test a third party patent that might be in the way.

So, finally, maybe some form of res judicata is something to think about. That is, it really would depend very much on what the rest of the system looked like and what the other options were for doing validity in district court.

FARRELL: Thank you. As Rob [Merges] mentioned at the beginning, this is a presentation of parts of what will be a joint paper between myself and Rob [Merges]. To give you the bottom line in a sentence, there are sound systematic economic reasons to believe that the incentives to challenge and defend patents in litigation are often, not always, but often, wildly skewed, and the result of that is, if you are tempted to think that you can repair rational ignorance or any other kind of ignorance or inevitable imperfection at the Patent Office through the litigation backstop, you are badly mistaken.

Why do the incentives to challenge and defend patents matter? We have a cheap, secretive error prone, according to many people, PTO process, and the question is: is there a well functioning backstop for this? There are other backstops, there are other processes, . . . the main one of

those, as I understand it, is litigation. Litigation is costly and I will say in a minute why I think that is important for the analysis. It is not for the obvious reason that we end up spending a lot of money.

. . . Rational ignorance and its cognates may be fine if litigation works well. Whether litigation works well depends on the parties' absolute and relative incentives to fight in litigation. Now let me explain why that is true. In order to get the right answer, you want two things: one is both parties have enough incentives to bring forward a reasonable and adequate amount of evidence, and the other is you want the incentives to be broadly balanced so that, loosely speaking, the decisions are apt to follow the merits rather than being biased in the direction of whichever party has stronger incentives to bring forth all the available evidence. Suppose you have a lawsuit between two parties, one of whom very much wants to win it and the other of whom, for some reason, does not really care very much. Even if the latter is in the right, he will probably lose because he will not spend the resources to bring forward all the evidence and put on the best case. Now you might hope, if you are a real optimist, that the court system is good enough that, even if one litigant does not care as much as the other litigant, the fact that he is right will make him win. If you think that, and I am probably pushing on an open door here, then you will predict and expect that people won't spend very much money in litigation, and that the amount of money they spend in litigation will not vary according to the stakes. Those predictions would be false. Therefore, you have to believe that the incentives do matter for the average outcome. And therefore, if as they claimed on the title slide, the incentives are wildly skewed, you will tend to get the wrong answer, on average, coming out of litigation. That is a problem if you are thinking of litigation as any kind of good back-up for an imperfect administrative system.

What do I claim are the relative incentives? They vary. But what I want to say is that in a widespread class of cases, I would venture to guess in the average case, the patentee cares much more than the alleged infringers. And I claim that this is apt to be true for two reasons, one of which I learned yesterday is actually in the literature, and the other of which, as far as I know, is not. So the first one that is fundamentally in the literature, [and] Joan Miller from Lewis & Clark has been at the forefront of discussing this, is that when there are multiple alleged infringers, a validity challenge is a public good among them. That follows from the Supreme Court's *Blonder-Tongue* decision, which basically said that if one alleged infringer gets a patent overturned or ruled invalid, that becomes truth which the others can call upon. And what that says is suppose you have five alleged infringers, each of them only have one-fifth of the incentive to

challenge the patent, that the patentee has to defend it. Five is probably a modest number, but let us take five because it actually fits with the numbers that I have messed around with. A factor of five is a big deal, given that the evidence on litigation costs suggests that spending fifty percent more than your opponent is going to make a significant difference. What is that evidence? If that were not true, then people would not end up spending a significant fraction of the amounts at issue in litigation, and they do. So a factor of five, or whatever it is from the public good component, is a big deal.

Now, by the way, the public good issue is reinforced to the extent that the patent holder can, as my understanding is they quite often do, put it about that they will discriminate based on challenges, or based on how quickly and tamely an alleged infringer takes a license. It is quite cheap for a patent holder to charge somewhat less than the otherwise profit maximizing price for a license to tame alleged infringers, and somewhat more to feisty ones. It is quite cheap because the profit maximization curve is flat on top, and therefore departing in either direction costs relatively little. . . .

The second point, the one that as far as I know is not in the literature, is when these multiple alleged infringers are not just independent multiple alleged infringers, but compete in some product market downstream, things are worse. The reason things are worse is, if one of them successfully challenges a patent, not only does it reduce its own costs, but it reduces the costs of its rivals. That pass-through, it turns out, has a huge effect on the incentives to challenge. The alleged infringers may bear little of the excess costs of a questionable patent, even collectively. Who bears the costs? Downstream consumers.

For example, suppose you have a billion dollar industry, suppose a five percent royalty is being demanded on a questionable patent, suppose there are five equal-sized firms in an industry that is using this technology, and suppose that the demand elasticity in that downstream industry is two. Then the patentee's stake in defending the patent is \$50 million, the downstream industry's total stake in challenging the patent is not \$50 million, it is approximately \$6 million. In other words, this pass-through thing in this particular case is a factor of more than eight, and then there is the further factor of five from the public good phenomenon. So what?

Based on the evidence from litigation costs, this is going to mean that the patentee is going to tend to win if the merits are broadly equal, challengers can only be expected to win what should be really quite easy cases. Among the likely results? Too few challenges, inadequately pursued, too few bad patents overturned, and downstream final consumers

bear the brunt. It is worth noticing that the role of litigation costs here is not so much that these challenges are costly when undertaken, it is that they may be more costly when they deter litigation. What to do? One thing you could do is to have cheaper post-issue challenges. That will help if what is going on is that the general expensiveness of litigation makes the ratio of incentives matter more, in other words, if a cheaper process makes the ratio of incentives matter less. It could well be true, although it is not analytically obvious. Another thing you can do is have a bounty system proposed to strengthen the private incentives to challenge, you could allow multiple challengers to get together. A third thing you could do is to accept that the adversarial approach is deeply flawed and say that pushes us, despite what you might otherwise hope, to try to improve the PTO. And a fourth thing you could do is to have these competition agencies, who should be in the business of defending final consumers, do so. Thank you.

NORMAN: I want to say thank you to the folks at Boalt Hall and from the FTC for inviting me here to speak, and at least pass on some information related to how some in the industry, not all, feel such a post-grant opposition procedure should be established. I would say that, coming from the pharmaceutical industry where we live on a daily basis with the Hatch-Waxman Act such that we are absolutely, unequivocally guaranteed that four years post-product launch we will be involved in a patent challenge from a generic competitor, which carries with it a bounty of the ability to obtain a 180-day co-exclusivity, we are talking about a system which is tried and true for eternal litigation. And my life is little more, anymore, than litigating patents in federal district court.

However, I have had some experience over the years in dealing with reexaminations and reissues in the United States, oppositions in Japan, and oppositions in Europe. I would be here today to advocate for a United States opposition system that is not as tightly wound as the Japanese, but perhaps a little more tightly wound than the European system. The elements that I believe would be most desired in a U.S. post-grant opposition system is one that has a set period of time in which to request an opposition. In Europe, we have nine months. Others have proposed here in the United States [that there be] twelve, yet other commentators have come forward and said, above and beyond the twelve months, there ought to be some period during the entire pendency, the life of the patent in which a challenger can come forward and request an opposition much along the lines that you could get declaratory judgment jurisdiction in the federal district court to bring everything back to the Patent Office and run one of these sort of cheap validity—supposedly cheap validity challenges—before the USPTO. I would be less in favor of something like that because

of some questions that I will raise later, much of it dependent upon the diceyness of declaratory judgment jurisdiction as it is currently being interpreted within the federal district court system.

I would say that, of course, all evidence needs to be brought forward at the beginning of the opposition, the patentee ought to have the right, of course, to be able to respond in kind. Discovery should be allowed, but ought to be limited to some reasonable manner. The vast, vast, vast majority of expense that arises from federal district court litigation in the United States arises from discovery. For instance, now that everything is finished, I can tell you that I ran a lawsuit for Eli Lilly & Co. a couple of years ago where the Federal District Court Magistrate ordered us to produce to the opposing party every document within Eli Lilly & Co. that had the name of the chemical compound on it. Try as we might, we could not get the Magistrate to back off that, and so we ended up producing 1.9 million documents to the opponent, less than 5,000 of which were ever found to be relevant and introduced into the court record. It is the outrageous expense of the way the United States Federal District Court system wants to run its discovery that is causing all of the problems that we all admit to now in litigations. However, before the Patent Office, we do need to have some sort of limited discovery, [since] the Patent Office has experience in interference proceedings whereby the Administrative Patent Judges at the Interference Board certainly know how to run appropriate discovery within the confines and the bounds of what would be truly relevant to the issues at hand. It is quite important that the Administrative Patent Judge be legally trained to the extent that, if we are going to follow the Federal Rules of Evidence and, as most people say, we ought to get to some level of estoppel, whether it be issue or claim preclusion, but some sort of estoppel arising out of a post-issuance opposition, then it is quite important that we actually follow the Federal Rules of Evidence and have a judge that is willing to enforce those.

Have a time limit. Everyone is saying a year, that would be wonderful. J.R.R. Tolken says, "The tale grows in the telling." So do the expenses in litigation and, therefore, a time limit that would be extendable only for cause would be most important. . . . [W]e ought to probably have a twelve-month period in which to bring the opposition, and then be limited thereafter to such an extent that, once a patent is past this twelve-month period, there ought to be some level of certainty, as Bob [Blackburn] raised, in the patentee's life, in the patentee's business, to be able to determine whether or not you want to draw up an additional \$100-150 million building, a pharmaceutical plant, to make this chemical compound. It would be nice to actually have a little bit of assurance that there are going to be very,

very limited opportunities for those coming in to make a challenge to actually pull you back into the Patent Office.

Another huge question is, in the event that we end up going towards a scheme whereby you can be brought back to the Patent Office, how do we deal with the status quo arising from the fact that many times, if someone is going to be infringing your patent and you want to bring suit against them, the first thing you need in order to maintain your business model is a preliminary injunction. If you get a preliminary injunction, then you are sent back to the Patent Office for post-grant review at any time during the life of the patent. We need some more rules and regulations and some more law around what needs to be done, how we are going to handle maintaining the status quo during the pendency of that if the Federal District Court Judge gives up the jurisdiction of the case and sends it back to the Patent Office.

Again, we like to see our Federal Rules of Evidence followed, we want to see the appropriate procedures followed. I have been involved in European oppositions, unfortunately, where I showed up for the day of the opposition and my opponent walked in and actually had a whole new stack of prior art and a whole new set of briefs, and handed them over in absolute violation of all the rules and regulations set down by the EPO. Nevertheless, the Opposition Division accepted it, and I spent the remainder of two days arguing against something that was nothing more than an ambush.

Along the same lines, too, we need to be concerned about how we are going to deal with expert testimony and whether or not you are going to have the opportunity to cross-examine an expert who might give an expert's report because, again, before the EPO, I have walked in before and seen a Ph.D. sitting across the table from me when I did not bring anyone at all, and found that the Opposition was quite interested in hearing what the Ph.D. scientist from my opponent's side had to say about the relevant level of ordinary skill in the art. I say this prevents reliance on the "astrology factor" because I was actually in litigation in the U.K. one time and mentioned from the witness stand that my client had taken advice before going into an opposition in the European Patent Office, and the good judge in the U.K. said, "From whom did you seek that advice? An astrologer?" Sort of laying out how the U.K. court system, at least, feels about the European patent opposition.

A very key element that we ought to discuss is the right to amendment and whether or not this ought to be a right from the immediacy, how it ought to be dealt with, whether or not broadening amendments ought to be allowed. My stance on this would be that, from the time that you get out of

the examination and you are in the opposition, you ought not be allowed to have a broadening claim as you are going forward so that the public can have some right of reliance upon exactly what has been going on in the Patent Office and whether or not the public can in any way make its decisions based upon the scope or the breadth of the claim. To guarantee a speedy resolution of the opposition, the patentee should be allowed to amend the claims only once. I say this, again, because I was in Europe one time when we spent two days going back and forth with—I think we got up to twelve auxiliary requests—and it became apparent to me that the Opposition Division was not really so much looking out for the public interest, but instead was hearing from me, hearing from the other party, seeing whether the other party could come up with an auxiliary request that I might be happy with, and vice versa. Actually the Opposition Division was acting as a mediator, which I think, if we want to use this as administrative action, may not be something that we would want to see occurring here in the United States.

. . . .

KUNIN: I, too, as the other speakers have indicated, appreciate being given the opportunity to speak at this conference today. What I would like to do initially is say that I think the Office is doing a pretty good job of examining patent applications. I want to thank Ron [Laurie] and Todd [Dickinson] for defending us at the earlier panel, but nevertheless, as you can see from the Office's *21st Century Strategic Plan*, we have a number of quality initiatives underway so that we can do an even better job.

In our Strategic Plan we have shown support for establishing a post-grant review system in the United States. We have done some comparative studies with the EPO and the JPO, and I would tell you that we also find art they do not find, so consequently I think you need to understand that it really is sort of a distribution, if you will, in terms of relative examination.

I think the important thing, with respect to any opposition or post-grant review, is that it be a process which is predictable, reliable, and timely. I do not think it ought to be an examination system, it ought to be a low cost administrative proceeding conducted at a renamed Board of Patent adjudication, done with special dispatch by a skilled Administrative Patent Judge, namely the people of legal and scientific competence as set forth in section 6A of the statute. One of the things that I think we need to do to make it attractive is to remove the provisions that currently exist in 315 and 317 on issue preclusion as to issues that could have been raised during the proceeding, at least during the first period, whether that be nine months or twelve months after the patent was granted or reissued. I think the one thing that we do need to recognize is that it is probably desirable

for us to have a system that avoids patent owner harassment, but at the same time truly incentivizes people to challenge patents which they feel are weak. This issue preclusion, an estoppel feature, is one that really needs to be given serious consideration. Maybe after the first year, if you can challenge after one year, you should have perhaps a substantial economic interest and maybe this higher level of issue preclusion would be applicable. I think we also need to make sure that these proceedings are ones that avoid some of the merger problems with other proceedings such as reissue and reexamination, and they need to provide a sufficient period of time for the challenger to reply to patent owners' responses.

Unlike reexamination, I think it is very important for us to permit the challenger to challenge claims based on all conditions of patentability. This will get a complete resolution of validity issues. Also, to increase reliability, these proceedings ought to be conducted using e-processing tools and techniques. The best approach, we feel, is one where we establish a proceeding that, once it is initiated, could be completed within twelve months. We do agree with the premise that at least one narrowing amendment should be permitted by the patent owner, perhaps a further amendment only on a showing of a good cause, and this would be entirely controlled by the three-judge panel, the Administrative Patent Judges.

Also, probably, there should be an opportunity for settlement in a situation where maybe there is a proposed narrowing amendment that could be handled by way of reissue and, if such an amendment were provided in a reissue, that the parties may choose to settle the *inter partes* proceeding. Probably the single best feature of our current reexamination system is an *ex parte* reexamination where the owner, him or herself, can come back to the Office of Administrative Proceeding to correct or strengthen the patent. Even with respect to an *inter partes* reexamination, it gives the opportunity for the examiner to hear both sides of an issue, to make a better informed decision and, of course, the appeal process is much faster than getting to the Federal Circuit in litigation. Reexamination really is nice where there is what we call "killer" 102(b)-type prior art that can be introduced and have a significant impact on the proceedings. Probably one of the worst features that we have heard is that there is no opportunity for the third party requester to obtain any discovery or cross-examination in affidants or declarants when evidence is presented by the patent owner in support of patentability.

I think, finally, what I would like to indicate is that we are currently looking at how to put together a legislative package that would indeed establish a post-grant system that has all the various benefits of those who advocate some of the best features from systems around the world, and to

avoid those things which have been already mentioned by other members of the panel which make it somewhat unattractive in other parts of the world. I think we can do this right. It is possible that this can be something that will either metamorphosize the existing *inter partes* and reexamine into a more workable system, or stand as an additional aspect of the U.S. patent system as a way to administratively correct patents in a way that can be substantially at lower cost and quicker, and truly address some of the issues that really led in the thought processes that went into some of the early President's Advisory Commissions on Patent Law Reform, one in the early 1990s by the then Secretary of Commerce, and see that perhaps this could provide us a good opportunity to further reform the system to sort of make good balance between what can be done in the examination of some 350,000 applications a year. Then for those that really will have a commercial impact, they could go through a second level of review in order to get the kind of scrutiny that ought to be provided, that just cannot be provided by any Patent Office in the limited amount of time you have when most people want the timely issuance of valid patents. I think the aspect of having high pendency is also a problem in relationship to good quality. We have to have a system where at least the initial examination is very thorough, but also in a timely manner to help provide greater certainty to those who are innovating and seeking protection, as well as their competitors. Thank you.

. . . .

FARRELL: So the question is, is there an additional problem caused by the fact that in some sense a bunch of claims can be made and an alleged infringer has to prevail on all of them, and in a context with error, that makes it almost impossible to expect to prevail. I am not sure what I think about that. If all the claims were correctly patented, then you ought to have to prevail on all of them Is there an increased probability of an incorrect finding of validity based on the fact that there are multiple things? I am not sure. It does make some intuitive sense, but I do not have a very firm intellectual grasp on that question.

MERGES: . . . [I]t is an interesting question. If you sort of set it up as an introductory probability problem and you say, "Well, gosh, there are eight patents and they each average, you know, twenty claims," it looks pretty hopeless. But it is interesting that, you know, here is one where the cognitive scientists have really predicted reality pretty well. What district courts actually do is they usually boil it down and they say, "Which of these eight patents are you really putting your money on? And which claims within them are you really putting your money on?" In other words, people are kind of boundedly rational, and district court judges

have only so much patience and time, and so what they tend to do is kind of boil it down and say, “[What is] the key patent and what are the key claims because I just do not have nine years to process the case.”

One way to kind of transpose your question is to say, “How would we handle that distillation process in an opposition setting? Is there a way to focus the inquiry in a similar way?” And it is a good question. I mean, I think it is something that would have to be thought through; if we could do the same thing because there are just sort of inherent limits on how much people can process and it shows up in the system, even when you are spending \$8 million, because it comes down to one or two decision makers and they are just not unlimited. You know, it is not the Cray-1, it is a certain judge. That is just the way it goes.

FARRELL: Can I just jump in again on that? I have come across cases where a patent holder has announced that it had multiple patents and that it was not going to litigate all of them in any one case, and perhaps that is a response to this distillation process. And that, I think, puts [the] question back on the table in a more forceful way—but I still do not know the answer.

. . . .

FARRELL: The question was what are the relative incentives if you have basically a patent thicket with multiple patent holders. I think the spirit of the question was these multiple patents are all blocking on the things that the alleged infringers want to do. I do not know the answer to that; it is a good question. I think one observation would be that, as to any one patent, if you do not have the public goods and pass-through issues in strong degree, then there is a certain symmetry because the two are potentially fighting over the same amount of money if you are just dealing with royalties. If you are dealing with injunctions, then, for the alleged infringer, to win one battle is only to be put into another battle and I think there will be circumstances in which that is a rather weak incentive. So I think that might lead to some results parallel to the ones that I was talking about, but I do not know.

MERGES: I think we should—we have got to hear from the biotech and pharmaceutical people on that question because that is kind of something that you guys face all the time, multiple inputs in the product development stream and lots of claims. . . .

BLACKBURN: Well, for the subject matter of the panel, you would want an opposition system, a cheaper faster opposition system to deal with those. And it would be that simple.

NORMAN: Right. And Bob [Blackburn] and I could get even chum-mier spending time before the Opposition Division. But there is sort of a dichotomy if you look at it just from the biopharma issue, from the biotechnology side where we do have thickets. If you look at the pharmaceutical side, often you find savannahs and that is not my quote. Bob Armitage said that a while ago. But in the straight pharmaceutical industry, you end up having, because of Hatch Waxman, having to list your patents in the Orange Book, and if you open up the Orange Book and look at any given drug product, you will find very often only one or two patents that have been listed. Now, admittedly, you will find some that have twelve or thirteen or fourteen, but, again, usually the biotechnology and the pharmaceutical industries are peculiar in that, because of the horrendous expense of bringing a product to the market, very often people are not willing to license a piece of their technology because you need that total market exclusivity in order to make back your investment on doing all the research and development on the pharmaceutical product itself. But, again, an opposition would be quite nice to take care of these things one or two years out.

.....

BLACKBURN: Well, I was actually interested in that number, too, and not so much as relative to reexamine. I think the explanation for the reexamine system being underutilized in the U.S. is because it is such a stacked deck for a challenger. You have an option of keeping your counter dry for district court litigation where you have more defenses and perhaps a better chance of bringing it about, so that is why, when you give people an alternative on an individual case, they are going to make that kind of decision. But I am certain that, in part, the reason there is more or vigorous opposition practice in Europe is, in part, because of the lack of some other reasonable alternatives at some level, and also a perception of a fair process—or fair enough. The thing that always sort of strikes American lawyers who go over there, who have been trained in American concepts of due process, it is almost like the cultural equivalent in some countries of somebody trying to shake hands with their left hand. It is just really odd what they consider . . . is a fair process. I actually take, for example, Steve [Kunin]'s proposal that there would be one opportunity to amend the claims. And I am a little bit concerned about discussions of the opposition system that we are thinking about implementing, or might adopt here, to start immediately dropping to that level of detail because I think there is a lot of other issues that have to be decided about whether that is a fair rule. For example, I do not know how you can say you only have one opportunity to amend if the other side can bring in new arguments, for example.

And they say, “Well, if you don’t, we will make it where the other side can’t bring in new arguments at a certain time,” but is that actually the best result to a quality output? Or is a fair iterative process something that we ought to look at that keeps within time lines? But, anyway, that is kind of a long answer.

....

MERGES: . . . The obvious answer is that a lower cost system is going to encourage more participation and include more public interest components than a high cost system. The one issue that you might consider in terms of design is whether or not the public agency can step into the shoes, maybe the PTO or somebody can step into the shoes of a private agency in the face of a settlement. And the settlement question is a really tricky one when you look at this. And so interesting problem. Dietmar [Harhoff] wants to address it.

HARHOFF: Of course, the cost issue is there. Let me tell you that in Europe there is an institution, Article 115, European Patent Convention, which allows third party observations, some *ex parte* procedure, and you come out with exactly or very very close to the same participation rate as with U.S. reexaminations. So, it is really the *ex parte* versus *inter partes* issue that is driving that. The other thing is, of course, and that addresses some of Joe [Farrell]’s concerns, Factor 5 is fine, but if you make it Factor 5 on a low cost figure, it has considerably less bite, and that makes it even possible for organizations like in Europe, NGOs, Greenpeace, some animal protection agency, the Free Software Institution in Europe, to oppose certain software patents. And they have been successful to some extent.

Now, the settlement issue is, I think, something that one should worry about, and one needs to go away from the classical interpretation of settlements as something that is strictly benevolent because in this case it is not. It is at the cost and the expense of society. If Rollet [phonetic] has a patent and I have the information to shoot it down in opposition, and you give us enough time to figure out how to deal with this, and he gives me a license and I shut-up. That is a wonderful case of dual monopoly and we do not want that. So be careful about the settlement issue. Within nine months at the European Patent Office, the averages that I hear from the patent lawyers, when I talk to them after two beers or so, is that there is a settlement rate of about 20-25 percent of the cases that do not even hit opposition. Now, that is low by U.S. standards in litigation, but I think it is an issue that you really should watch, and my proposal would be to make it a short time for filing—that is why my three months came up—give the parties some more time to develop the evidence then, but allow the U.S. Patent Office to pursue the case in and of itself if it wants to, because it is

the Patent Office's task to make sure that patents that should not be there should not be there.

MERGES: Joe [Farell], last word.

FARRELL: I would just like to reiterate what Dietmar [Harhoff] said about settlements. The most affected, or often the most affected people, are not at the settlement table, and the excessive incentive for cozy settlements is fundamentally the same as the incentive that I was talking about to not bring a challenge in the first place.

MERGES: . . . Thank you.

IV. LITIGATION PANEL (INCLUDING PRESUMPTION OF VALIDITY)

Panel:

Pam Samuelson, Boalt Hall School of Law, University of California, Berkeley (moderator)

Mark Janis, University of Iowa College of Law

Mark Lemley, Boalt Hall School of Law, University of California, Berkeley

Lynn Pasahow, Fenwick & West LLP

James Pooley, Milbank, Tweed, Hadley & McCloy LLP

Edward Reines, Weil, Gotshal & Manges LLP

Arti Rai, Duke Law School

SAMUELSON: I am Pam Samuelson. I am one of the Directors of the Berkeley Center for Law and Technology, and I have the great good fortune of being the moderator for this panel on litigation issues. . . . This [panel] will be a little bit more of a potpourri than the previous two sessions, but I think nevertheless will both deal with some of the issues that the FTC has raised about the presumption of validity, which obviously has gotten a lot of people's attention, but also will cover some of the issues in the National Academy Report because subjective factors were both discussed in the FTC Report and also to some degree in the National Academy Report that is coming out on Monday. So we will have a chance, I think, to sort of visit quite a few issues in the course of this panel. . . . First we will start with Mark Janis who will be talking about presumption of validity issues.

JANIS: Thank you, Pam [Samuelson]. Thank you for the invitation to come here. . . . I apologize if [my remarks are] too fragmentary. I will use

the usual Academic's excuse—there will be a paper and you can read the paper—and that will be very coherent, I promise you.

I keep hearing all this talk lately about trolls, and at first I thought, “I do not need to pay any attention to this, I am from Iowa and we have no trolls there.” Then I began hearing that these were actually patent trolls. That got me interested and here is what I read in the transcript of a Congressional Hearings testimony within the last few months: “Patent trolls are patent system bottom feeders who buy improvidently granted patents from distressed companies for the sole purpose of suing legitimate businesses.” And this brings us to the topic at hand because these patent trolls, according to the testimony, have the presumption of validity on their side and, so, clearly, they must be stopped.

This is where the FTC comes in. It is [up to] our federal government here to either save us, or at least here to study the matter very, very thoroughly. And it should be studied very thoroughly because this is a serious matter, not just a fairy tale matter at all, this patent validity litigation and patent validity disputes. What I would like to do . . . is to think about two functions that the presumption of validity might perform, and then I want to argue that the FTC's proposal to reduce the standard to preponderance for overcoming the presumption of validity might overlook the first function. And as to the second, I doubt that I will have time, but I have got a few things to say about that, as well. As to the second, there are arguments that are a little more plausible.

Let me tell you what I mean by two functions that the presumption might perform. Here is what the Supreme Court has to say on the matter, not as to the presumption of patent validity, but as to presumptions more generally. [Presumptions] might sort of do two things: 1) indicate the relative importance that society should attach to the ultimate decision—I want to call that the “expressive function”; and 2) allocate the risk of error usually as between the litigants—I want to call that the “instrumental function.” And it is ordinary to talk about the presumption, and especially the presumption of patent validity in terms of the instrumental function, the second way. And I think that is what you find in the FTC Report and, in fact, that is what you find in the literature—a lot of the literature—about presumptions.

For example, in a criminal case the State should bear the risk of error, and so we have a strong presumption of validity, beyond a reasonable doubt standard for overcoming [the presumption]. [In a] civil case for damages, parties should bear the risk of error equally, hence we have a preponderance standard. We can build on this, and have a nice neat menu of options—like picking the wine for dinner where we have [an] ordinary

civil case, or we have a criminal case, or we have some kind of case in between that gets a clear and convincing standard. And the FTC Report, I think, makes plausible arguments in this regard. It says the patentee should not enjoy the benefit of a strong presumption of validity because we have concerns about the quality of patents, so therefore the patentee should be made to bear a little bit more of the risk of error, to put it in those kind of terms. The FTC also says, and I think this is important, that the clear and convincing standard might facilitate anti-competitive uses of patents. And that is interesting because it shows us that there are obviously—and we have heard about it already today—third party effects to be concerned about here. [It is] not just a matter in patent cases of allocating the risk of error between the two private litigants, third parties have interests as well. Maybe that would lead us to think that the clear and convincing standard would be inappropriate.

And those proposals are fine, but I want to turn back to the first function, the “expressive function” of the presumption of validity, and make a few comments about that. First of all, what do I mean by the expressive function, exactly? There are a couple of things that one could mean. One is that a rule is expressive in the sense that it is purely symbolic; it is not designed to accomplish anything except make a statement, even if it is never enforced. One way to think about it [is if I made a] rule on flag burning or something like that. Even if you never expect it to be enforced, the fact that [my rule] makes a statement is significant. Another example, or another variety, is a rule whose main significance is as a statement of aspirations, or a statement of principals. Even if that rule is designed to accomplish something, we do not necessarily expect to find very sharply [defined] incentives and disincentives, nor do we expect that we have real precise control over the level of enforcement, it seems to me that is another way to think about a rule that is expressive.

Let me suggest a few insights that we might gain from looking at the presumption of patent validity from this perspective, as a statement, as a symbol. One, the fact that we have a presumption of validity might be as significant, or more significant, than the precise verbal formulation that we use for the standard of evidence for overcoming the presumption. Second, while it is easy enough to manipulate the words of—the precise verbal formulation—the words of the standard, it might be very different and a very subtle exercise to manage the message, the overlying message that is embedded in this presumption of validity. And then, thirdly, manipulating the words without paying attention to the message, the overlying message, might lead to some real surprises. Ironically, it might lead to changing nothing, while changing everything.

What do I mean by that? Suppose you change to a preponderance standard. Is it really going to make a difference, really going to make a difference, in the outcome of judicial decisions? Or will judges go on and do the same thing they did before and change the words? I think there is at least some question about that. So that is the changing nothing part. Yet, on the other hand, the other actors in the system, at least in the short term, might perceive that the overall message has changed dramatically. Patents are less secure, the patent system deserves less respect, and so forth, and the consequences that flow from that. So, it might be counter-productive at the end of the day.

Let me just explore that a little bit by getting down to cases. First, early Federal Circuit cases dealing with the adoption of the clear and convincing standard. If you think about this, before the creation of the Federal Circuit, most courts already used the clear and convincing standard for overcoming the presumption of validity. A vast majority of them did, yet the overlying message was that the patent system was in distress, that the presumption was meaningless. There is a disconnect between the words that we use and the overlying message. Now, to be certain, some courts were also holding that the presumption of validity did not apply to newly introduced prior art, that certainly contributed to the message. After the creation of the Federal Circuit, the Federal Circuit adopted the clear and convincing standard. You could look at the words and say, "Well, that is hardly a watershed event, there already was the clear and convincing standard." The Federal Circuit also spoke to this issue about newly discovered prior art and it said, "Well, the presumption still applies, but yet it may be a little easier to overcome the presumption." You could look at that and say that is really no change from the law before, yet if you look carefully at the tone of these cases, and if you combine that with other things that were happening in the patent system at the time, it is very clear that the message had changed. And we see this in the FTC Report today and probably all of us would say the Federal Circuit has strengthened the presumption of validity and this has changed the message.

Now, this can work the other way—that the words can stay the same and the message can change. Look at the *Rochester* case where the court says a patent can prove its own invalidity, and do so clearly and convincingly. The words can stay the same, but the message there is a little bit different. Look also at trademark cases. I clearly do not have time to talk about those trademark cases where the preponderance standard is used. Take a look at a case called *Burke-Parsons-Bowlby*. It is an older Sixth Circuit 1989 case, and you get a little bit of a scary view as to the use of a

preponderance standard for overcoming the presumption of validity—very difficult to figure out what is going on there.

Bottom line here, changing the words of the standard might not make a lot of difference in case outcomes. At the same time, the overarching message that the presumption of validity sends in the patent system is a very potent indicator of the overall health of the system, and I worry a little bit that by choosing the presumption of validity as a point of policy reform. The FTC might not have chosen wisely. They may create more of an adversarial tone than I think they ever intended to do. Now, other comments will have to wait. So thank you very much.

SAMUELSON: Our second presenter will be Arti Rai.

RAI: I am going to focus on the presumption of validity as well, although perhaps I will take a little more sanguine view of what the FTC has done than Mark [Janis] did. In talking about this recommendation, I will also end up within ten minutes looking a little bit at the FTC's recommendations on the nonobviousness standard and on opposition proceedings, believe it or not. So bear with me.

In my view, I think the FTC has actually made some very interesting recommendations with respect to all three issues—the presumption of validity, nonobviousness, and opposition proceedings—and they can be viewed as a coherent whole from a procedural perspective rather than a substantive perspective. I will explain what I mean by how they can be viewed as a coherent whole—but the basic insight is that I think they can all be understood by looking at the comparative competence of the various institutional actors within the patent system. And those of you who have read my work know I love to talk about institutional competence, so you will hear a little bit more about this today. So with some caveats that I will talk about more towards the end, it seems to me that, in the context of the ordinary patent that is issued, there is good reason to set the presumption-ability at a little bit of a lower level than it is currently set.

Now, Mark [Janis] has made some interesting points about what will be the actual impact of the FTC's proposed change, and I think that is actually very interesting to consider empirically in the context of all sorts of different areas of law where presumptions matter and people have done empirical work. I think we should continue to do that in this area as well. But for all of the reasons that the FTC and many, many others have pointed to, perhaps Mark Lemley most eloquently of all, ranging from burdens of proof, to incentive structure, to workload, to the *ex parte* nature of the proceeding, a patent examiner's decision to issue a patent should probably not be the last word on its validity. And this is true, I would argue, even despite the fact that a patent examiner is probably the person in

the patent system, at least the legal actor in the patent system, that is closest to being the all important PHOSITA.

Even despite that fact, I think that patents that are issued are not necessarily—one should not necessarily give much deference in the context of issued patents, which brings me to my next point. In contrast, when the patent examiner denies a patent, I think there is some reason to give weight to his or her status as a quasi-PHOSITA, which is particularly true in biotech, for example, where the patent examiners are fairly well-steeped in the technology. And, to put it mildly, none of the various institutional pressures that cause the issued patents to be somewhat problematic come into play in the context of denials. In fact, if anything, all the institutional pressures run against denials.

How does this all relate to the FTC's recommendations in the context of nonobviousness and opposition proceedings? I would interpret the FTC's discussion of the nonobviousness requirement as having been prompted by decisions by the Federal Circuit that reviewed the patent examiner's denial of a patent and simply refused to defer to the factual knowledge of the patent examiner in those contexts. I would argue, and have argued, that the Federal Circuit should in many circumstances, if not most circumstances, defer to a PTO fact-finding in the context of a denial. There [are] particularly good reasons for showing this kind of deference when we are talking about a PTO's determination that a particular combination is obvious because, for all the reasons that were discussed in the first panel, a PTO examiner is likely to be the person closest to the PHOSITA in terms of thinking of combinations of references. So in the denial context, there is good reason to show deference, and in the issuance context, less reason to show deference. To use the words made popular by Condoleezza Rice recently, we should have an asymmetric response to the PTO's actions.

Unfortunately, from the perspective of institutional competence thus far, the asymmetric response has been precisely backwards. We have tended to show more deference because of this high presumption of validity to the PTO's actions in the context of an issuance, rather than the context of a denial. So my view is that the FTC's recommendations in the context of nonobviousness and opposition proceedings, particularly nonobviousness and then also its recommendations in the context of the presumption of validity, are leading us towards asymmetric response in the right direction: more deference in the context of denials and less deference in the context of issuances.

What about opposition proceedings? I did mention I would talk about those. And what about the presumption of validity to attach in those con-

texts? Here, I think, the FTC has been pretty careful as well. If you look carefully at the recommendations, we have said that the decision of the PTO in the context of an opposition proceeding should be reviewed deferentially always, whether the PTO ultimately decides to grant or to reject. I think that is absolutely right as an institutional matter because if a patent has been looked at from a comprehensive adversarial perspective in the context of an opposition proceeding, there should be deference, not only on the fact-finding, but on the legal conclusions as well. And for what it is worth, for those of you who remember your administrative law, this is perfectly in keeping with the way that the Supreme Court has administered the *Chevron* deference standard, most recently in the *Mead* case. We would also nicely bring patent law into conformity with administrative law, which it often is not in conformity with.

I do have one small issue with respect to the FTC's recommendations, well, perhaps not such a small issue, but it is an issue that I must admit I also do not have a good answer to, and that is the following: so we put in place robust opposition proceedings and there is lots of deference in the context of those opposition proceedings, not so much deference in the context of an issuance, and a fair amount of deference in the context of denial. What happens if a patent goes through the system and just happens not to be challenged in an opposition proceeding, and therefore falls into the pile of patents that are subject to a thin presumption of validity? And what if the reason for its not being challenged was that it was simply a very solid patent? Should it be put into the same pile as all those patents that are subject to the thin presumption of validity because we think the patent issuances are somewhat suspect?

I do think that is a problem, but as a practical matter it may be less acute a problem than one might think at the outset. For the most part, I would imagine, although of course we are all speculating here since we do not have anything remotely comparable to an opposition proceeding. On the other hand, the European experience does tend to suggest this as well, [and] I would imagine that the most important patents would, in fact, be the subject of an opposition proceeding, no matter how solid they were. That is, that there would be some piece of prior art that somebody would want to at least try to run by the patent examination procedure in the context of the opposition proceeding with respect to really important patents. So for those who are concerned, particularly in the biotech industry which I study, [about] what will happen if we have a lower presumption of validity for most patents, particularly for biotech where the patents really matter, or pharma[ceuticals] where patents really matter, well, I would suspect that most of those patents would go through an opposition proceeding, and

thus be subject to a very high presumption of validity. But that is a problem and one that is important to think about. One way of tweaking the FTC's recommendations a little bit, perhaps so as to not render the thin presumption of validity entirely meaningless, would be perhaps to have a higher presumption of validity even in those contexts where the patent has not gone through an opposition proceeding for situations where there is no new prior art presented, so as long as the litigant does not present any new prior art, the patentee still enjoys a fairly high presumption of validity. So that is one way of tweaking the FTC's recommendations a little bit.

That is my view of how the recommendations with respect to presumption of validity, nonobviousness, and opposition all cohere from an institutional competence standpoint, with the slight tweak that we may not want to take the presumption of validity too far down for your ordinary run-of-the-mill issued patent because it may not have been subject to an opposition proceeding because it just happened to be very good. Thank you.

SAMUELSON: Thank you. Lynn Pasahow is going to give us some commentary.

PASAHOW: Well, from a nonacademic point of view [and from] someone who litigates patents, I was asked to give my impressions of this. These impressions come from trying software and biotech and internet patents to judges and juries, but more from going to focus groups that we often have before our jury trials where we put on a mini-trial and then watch the jurors talk about these things behind one of my glass mirrors.

AMmy first reaction to the FTC proposal is gratitude because, in my experience, the presumption of validity causes clients who are thinking of challenging patents not to do that or who are thinking of not taking licenses to take licenses. I think doing away with the presumption is one of the few proposals that government agencies are making today that is going to have the impact of increasing litigation, and I am surprised that one of our agencies is pursuing that goal.

But my other reaction is mystification because the question in my mind is this: I think that the presumption, to the extent it does anything in litigation, and that is something I'll come back to, but if it does anything, it limits the discretion of the jury, it puts the jury into a tighter box and controls them more. And so what we're doing is we're saying that the Patent and Trademark Office has some problems with its competence, and instead we are going to transfer the decision making more to the unbridled discretion of a bunch of jurors.

Now, for these jurors, think of the places that are popular for patent cases and think about why. Today one of the most popular patent courts is the Eastern District of Texas, the town of Marshall, Texas—not a technology center. And without a lot of cynicism, I promise you, people go there to get the least educated jury panels possible. The question is not whether the jurors have modern science competence in whatever field they are examining patents; they have none. The question is not whether they are going to spend twenty-five hours studying the art and the patent, they are going to sit there and watch the lawyers do their show, and we have found in almost every trial that we have looked at, and we have looked at not only the ones we have done, but some that other firms have tried, and in no case has any juror ever read the patent front to back. No juror has read a patent front to back. So what we are doing is we are taking the PTO discretion and turning it over to these jurors in a situation where they do not have the tools to do much.

The Federal Circuit tells us that the decisionmaking by this jury is absolute, almost entirely. We are not going to give them a clear and convincing standard presumption, we are going to assume what they did was right, unless there is absolutely no basis on which they could have decided what they decided. That is the standard on appeal. Once the jury comes back and says this patent is valid, the only issue is is there any evidence from the disputed experts on which they could have relied. Taking it one step further, the Federal Circuit told us in the *Bi-technology v. Genentech* case that it does not matter that two National Academy members have debated a highly esoteric, cutting edge issue with science as to which experts disagree, and that the jury could not possibly have made a reasoned decision. That does not matter in the slightest. The experts put on their testimony, the jury comes back with a verdict, and that is the end of it. The Federal Circuit will then accept that decision on the patent and that will be the decision that determines the fate of the validity of that patent. Given that that is the likely effect of doing away with the presumption of validity in most cases, I am perplexed.

Now, of course others will point out, “Well, judges try patent cases too.” And that is true. And some judges study patent law, and some judges even have scientific training. Perhaps more importantly, judges have the time and the incentive. They can read the patents, they can hire technical experts that are independent court experts, so they can have the tools to do this right. A couple of points about judges, though. All judges are not as interested in patent law or as knowledgeable about it as the judges that are going to appear before you, who are going to appear before the Federal Trade Commission hearings. There are judges out there who actually hate

to hear patent cases and try and spend as little time on them as possible. But the second and maybe more important issue is, under our system, either side can demand a jury trial. The problem here is one that we, the trial bar, created. In the mid-1980s we started trying some very complex technology cases to juries for the first time. Up until then, judge trials in patent cases, at least, cases about real patents and real technologies, dominated. But we started trying some of these cases to juries and what we found—and we found it in these pre-trial focus groups—is that one side or the other in almost every case enjoys a huge bias to a jury. And because we now know that, we will test that somewhere along the way and that party in any significant case is probably going to demand a jury trial and stick to it. And, again, that jury may well be the jury in the Eastern District of Texas. It seems to me that the efforts for fixing the patent system would be much better spent on trying to improve the PTO processes as the Commission also suggests, and if we do fix the PTO processes, I do not understand why we would not want the presumption to continue.

Now, finally, just on the question of does the instruction really matter. I have some question about that based on my experience. The lawyer's argument about how patents come about and what we are permitted to tell the jury by the judge, in my experience, matters a whole lot more than what the judge tells the jury in a very short instruction [of] what the presumption of validity might be. So it would take a whole lot more than just changing the instruction to have any impact.

There is now a videotape that was prepared by the Federal Judicial Center that describes how the patent works. I know it has been tested by different firms and I am not even sure we are getting consistent results, but at least what we have seen is that it strongly reinforces the presumption of validity of the patent. It shows patent examiners wearing suits and working on patents, and at least the impression that mock jurors give us back is, "Yeah, it looks like a good system. It causes us to believe patents must be valid if they go through that system." It seems to me that if someone in the government wanted to change the jury view of what patents are and what impact that you have on their deliberations, one of the first things to do would be to make that a more balanced videotape. Then the other thing is, judges have a lot of discretion in what kind of instruction they give. Some judges give an instruction that tells the jury that the facts have to be clear and convincing to show that the patent is invalid, and you have to have a strong belief in your mind that it is right, maybe a moral certitude is a word that is in some of the ancient instructions. Here in the Northern District of California, most judges use a standard instruction that the court has worked its way through which simply tells jurors that in order to find the

patent valid, they have to be convinced that it is highly improbable that it is invalid. It seems to me that a patent that has gone through a Patent and Trademark Office procedure and has had someone, who is skilled in the science and knows patent law, judge this as an invention which should be an issued patent, ought to at least have that impact on the juror. They ought to be convinced that it is highly probable that the government made a mistake.

To close, the really most compelling thing we find about patent validity in our jury research before trials is a lot of our citizens believe that when the government does something, it is probably right. This varies from geography to geography. Here in the Northern District of California, you can actually invalidate patents a whole lot easier than most other places. The Eastern District of Texas, not surprisingly given what I have told you, is one of the places where the jurors almost never think the government makes mistakes in its patent issues. And another court, and maybe one of the most important ones given all the trials there, is the District of Delaware and there, as well, the jurors almost always validate patents because they have this underlying glee in the correctness of government action.

SAMUELSON: So, Ed [Reines], did you want—

REINES: Yeah, let me address this a little bit. First of all, Professor Janis referred to the fact that people have used the term “trolls” and other terms such as that regarding people in the patent system. As someone who has litigated a defamation action based on the use of various and sundry terms such as that, I advise that the word “troll” is probably safer than “patent terrorist.” So if you are going to use terms like that, or your client is going to use terms like that, there [are] better and worse for defamation purposes [as] I have had the pleasure of learning.

The comments I want to make, first of all, on the presumption of validity is it is important analytically to decouple the presumption of validity from the standard of proof because they are two different things and they raise different issues.

The standard of proof, I think, in terms of jury decision making, is critical. It is the one thing the jurors grasp. Obviously, they will be swayed by a host of additional considerations, but when they hear preponderance versus clear and convincing versus reasonable doubt, those are things that they take seriously in my experience. So it is one thing to change that. Now, there is a trend away from even informing the jury in terms of the judge of the fact of the presumption of validity. I mean, the patent exists, so in that sense it is there, it is valid, so that is the start point. But it is important to appreciate from a litigation perspective that judges are increas-

ingly declining to inform the jury that there is a presumption of validity. . . . In a relatively important case that came out just about a week and a half ago in the *Chiron* case, Judge Rader's panel affirmed that decision not to give a jury instruction or presumption of validity over objection and appeal. So now there is [a] Federal Circuit perimeter on that, as well as model jury instructions in this district and others that do not have that. So if the jury never learns about the presumption of validity, at least from the judge, whether it exists or not, is less important because I think judges are used to the fact that presumptions are procedural vehicles, not substantive evidence, and they are capable of making the assessments of what weight should be given.

. . . .

Also from the reform perspective on the standard of proof, which from my perspective is where the action is, I think reform efforts should focus on the differentiation between different issues. There is a tendency to focus on prior art as the main area, and that is quite an important area. The areas that at least trouble me, personally, on the standard of proof are areas where, as a practical matter, the Patent Office is not performing any examination. So all the issues that we are talking about about the quality of an examination or discouragement of the PTO or anything else, do not apply to things such as inventorship, typically. I mean, there can be disputes, but in general, the applicant submits who the inventors are and that is it. I mean, if you have been through the ringer, you know that there is just not scrutiny on that. Best mode is another example. I have never in all the file histories I have looked at seen a best mode objection or, if I have, it has been in an anomalous case. It is on those things where there is not really examination, certainly in any meaningful way, and yet there is an elevated clear and convincing standard. That seems to me to be wrong.

When you move to prior art, it is a more complicated picture and I do not think they should be conflated. On the prior art, I think, there is one thing where there is a joined issue, an interference, a reexamine, or just a thorough examiner doing the right job where it makes sense for it to be a higher standard, and there are situations where the prior art is never presented or, in the case of [section] 102(e) prior art, maybe did not exist at the time of the examination, where the same level of proof should not be required. So I would propose decoupling the two and then, within the standard of proof issue, which to me is the more important in terms of reform efforts, having nuance to distinguishing the different elements. Thank you.

SAMUELSON: Great, thanks. Now we will hear from Mark Lemley.

LEMLEY: Let me start out with presumption of validity and then actually broaden it to some other issues—there [are] a bunch of litigation reforms in the FTC Report—we have not talked about yet.

I think the FTC is exactly right on the presumption of validity, and here is why. The problem is that, for a variety of structural reasons, the PTO is simply not set up to make anything like a very strong determination one way or the other on the validity of a patent to which we ought to give it substantial deference in litigation. Why is that? Well, start with the fact that the applicant never has a burden of proving anything. The way the law is now interpreted, if I decide to patent the wheel, my invention is that it shall be round, and the examiner does not come up with prior art [since] it is the examiner's burden to come up with prior art, if they don't, I get the patent. Right? The presumption in the Patent Office is I get a patent. Then when we get out, the presumption is, "Well, that patent was examined by the PTO, and so it must be valid." But there is never a point at which I have affirmatively to show anything. Second, the PTO is overworked. They get 350,000 applications a year. They devote seventeen or eighteen hours total over the course of three years to your patent. That means reading your application; searching for prior art; reading the art that you submit; comparing it to the application; writing a rejection; reading the amendment and response you write to that objection; probably writing a second misnomered final rejection; dealing with a phone call in which you are persuaded by the applicant to change your mind and allow it; and writing the Notice of Allowance. All that, three years, seventeen or eighteen hours.

Now, maybe they do a wonderful job under that time constraint, I am willing to concede that. I do not think the problem is examiners are stupid. But I think the problem is, given the time constraints we have and the cost constraints we have, that cannot possibly be a full and searching examination of the kind that you will get in litigation. The problem is worse because the way we have structured the examiner's incentive, you get rewarded only for the first office action and for finally disposing of the patent. You do not get rewarded more for disposing of a patent that cites 150 pieces of prior art and has 120 claims than a patent that cites two pieces of prior art and has three claims. As a result, those long complex patents, which are the very ones that turn out to get litigated at the end of the day, are likely to get less scrutiny per claim, less scrutiny per piece of prior art, because the examiner's incentive is not to focus on the complex ones, the examiner's incentive is to get as many applications out the door as possible. Couple that with the fact that there is a very strong culture in the Patent Office that issuing patents, not denying patents, is the thing to do.

When you look at the mission statement of the Patent Office, it is “To help our customers get patents.” That may be a very justifiable mission in lots of respects. Patents are good things, but it is not something that inclines examiners to resolve the doubtful case by rejecting the patent application, and indeed they don’t. Once you take continuations into account—continuations are another problem—you cannot ever finally reject a determined patent applicant. No matter how many times the examiner says, “No, I do not wish you to have this patent,” the applicant can always come back and ask again. You can wear down the examiner until the logical thing to do is issue the patent. And it turns out, as a result, when you take into account continuations, about 85 percent of all applications result in at least one patent at the end of the day.

Is this a flaw in the PTO? Maybe. I actually tend to think not. I think, instead, the PTO is doing what it is supposed to be doing—it is doing a quick once-over. It is doing a light screen of this huge number of applications to weed some of them out, to narrow some of them in scope to prevent people from claiming too much, and then it is properly leaving to the litigation process the real hard determination, the devoting of ten’s of thousands of hours to searching for prior art [and] to analyzing prior art.

But we can’t leave that determination to the court, on the one hand, and then, on the other hand, say, “Oh, but because we have had seventeen hours of scrutiny in the PTO, we must give deference to that scrutiny.” Now, Lynn [Pasahow] says, “Wait a minute, if we do not allow, we do not give that deference, the result is going to be juries run amok.” First off, it is plaintiffs, it is patentees, not defendants, who are going to Marshall, Texas, because they want the jury that does not have the technical background. They are going there because they know, and the empirical evidence bears out, juries are more likely to favor the Patent Office already. Because the jury says, “Wait a minute, I do not know anything about atomic layer deposition. The PTO has experts. They have already blessed this. I am inclined not to second-guess those experts at the PTO.” If we reinforce that already existing inclination by telling them legally, “Let’s have a strong presumption that what the PTO did is right,” the likelihood is we are never going to get substantial numbers of jurors to take a serious look as the litigation system wants them to take a serious look at whether or not these patents are actually valid. Lynn [Pasahow] then says, “Well, the Federal Circuit is going to defer too much to the jury.” That is, I think, perhaps the first time I have heard anybody say that the problem with the Federal Circuit is excessive deference to what goes on in the district court. They are in huge panels discussing the opposite—that the Federal Circuit intervenes too much. It seems to me that litigation, as Joe Farrell points

out, is an imperfect system. But if anything, it is an imperfect system already biased in the patentee's favor. Why would we want to give a better bias, a stronger bias to it? I do not know. So I think that what the FTC recommends on this issue is exactly right. At a minimum, even if you think this is too radical, either too radical to be adopted or too radical to be good policy, then we ought to take what Ed [Reines] says to heart. At a minimum, on issues in which the Patent Office has not engaged in examination at all, either it is an inventorship issue or it is prior art that was not cited before the Patent Office, it seems absurd to give deference—clear and convincing evidence deference—to the PTO's determination because there was no determination. So the idea that it has got to be an across-the-board validity presumption seems even more silly than the standard as it currently exists.

We have not really talked at this conference about implementation, but it seems to me that the way this can be implemented is actually quite simple. If you go back and you read the statute, the statute says there is a presumption of validity. Of course, the statute also says in copyright cases and in trademark cases, there is a presumption of validity, and that presumption, as Ed [Reines] points out, is decoupled from the standard of proof. In both of those cases, it is a presumption, but it is preponderance of the evidence. It does not take statutory reform to implement this particular FTC proposal. All the Federal Circuit needs to do is say, "Wait a minute, maybe it does not make sense to be deferring quite as much as we already are." So much for presumption of validity.

A couple of much briefer notes on two other reform issues. One, which I suspect no one else at the conference is going to talk about because it seems fairly obscure and non-controversial, is the section 105 relevancy statement. This was briefly mentioned this morning. Todd Dickinson says—one of the things he did is he got examiners the power to demand from applicants that they explain the relevance of particular pieces of prior art. This seems to make sense from the examiner's perspective if you are inundated with large amounts of prior art. What I want to know is, what do I need to read. Given my time limitations, what is it that is important to me? But I will tell you as a litigator, if you start as a practical matter requiring relevant statements in section 105, I guarantee you that in every case I defend, I will get past summary judgment with an inequitable conduct defense. If you make somebody write down, "Here is what is important in this prior art reference," there will always be something that they left out, there will always be something that you can say, "Oh, they said it wrong, they misstated it." There will be a litigation bonanza for defendants. The only thing you can do if you are a prosecutor in response to that

is overdisclose: “Here is each piece of prior art, you need a relevant statement for each piece of prior art. I am going to tell you everything is relevant. Here is why this paragraph is relevant, here is why this paragraph is relevant, here is why this paragraph is relevant.” [The] PTO’s burden actually may end up being higher, not lower. So I think it is a good idea in the abstract, and if we focus only on the PTO, it makes perfect sense. I fear a little bit, though, the litigation consequences of doing that.

Final point. The FTC suggests that we need to change the trigger of willfulness. Right now, I can be a willful infringer merely because I run across a patent. My engineer reads a patent, they are aware of the patent, they are doing something which we later determine infringes that patent, they are a willful infringer at least unless we start playing a rather remarkable game in which I go get an opinion letter of counsel that says, “Oh, no, it is okay to continue doing this.” I agree to disclose that opinion letter of counsel in litigation, I therefore waive the attorney-client privilege. How far, no one seems to know. There are no less than eight different legal rules in District Courts on how much the waiver extends. If I play this game, I am in serious trouble, and so a bunch of lawyers tell their clients, “Whatever you do, don’t read patents, because if you read patents you get us stuck in this really sort of labyrinth and quite disturbing process.” So what the FTC suggests, which it seems to me is exactly right, as a starting matter, is we ought not say that merely because an engineer read a patent, the company is willfully infringing that patent. We ought to have a higher trigger. I think that is a good idea, I think it is a necessary reform, but I do not think it is a sufficient reform. There are substantially greater problems with the willfulness game. I am still, whenever I get a letter, going to have to get my opinion of counsel, disclose my opinion of counsel, waive the attorney-client privilege—it distorts litigation advice. It distorts pre-litigation advice, it distorts your choice of counsel because you want your opinion counsel to be different than your litigation counsel, and so there are substantial problems with the willfulness game that are not addressed here, but at least the FTC’s report is a first step. . . .

SAMUELSON: Following up on the issue of subjective factors, Jim Pooley, I think, wants to say a few things.

POOLEY: Thank you. . . . You know, first, on a point of personal privilege, because the issue of the video from the FJC [Federal Judicial Center] came up I did write the script for that [and] received as many comments in the other direction of what Lynn [Pasahow] brought up. I take that as a signal that we probably did what we were supposed to. In fact, people on the other side of that debate complained about the narrator’s comment that, you know, you may be wondering why you are here

being asked to decide these validity questions. Well, in part, it is because mistakes sometimes are made, and while that is being said, you know, we cut to a scene of the over-worked patent examiner in her office with a stack of files this tall on her desk. Then that scene at the end where somebody pushes the cart through the file room when it looks like the final scene in *Raiders of the Lost Ark*. You know, we do try to get both sides in there.

But, moving on to the issue at hand, I had the privilege for the last several years of working with my colleagues on the Committee of the National Academy project, and the basic thing that we were looking at when you boil it all down, with the benefit of a lot of academic interest and perspective, was why do we hear so much noise and concern about the patent system? Where is the sand being thrown into the gears of the machine? And in large part, we found that it was in the enforcement system. And here I have to say I agree very much with Bob Blackburn on this point. When you talk to our clients, the people who deal with this system, they will tell you the reason that they end up being so irritated about having to pay out large amounts of money for something that is not perceived by them to be of very much value intrinsically is because they are petrified of the uncertainty, the unpredictability of the outcome of the process, as well as its costs.

When it gets down to enforcement, we find, I think, some of the greatest impact of the choices that we make in designing the system on how it actually is implemented. And, in part, looking at the enforcement system, we run into the issues that Lynn [Pasahow] mentioned about using juries for this process of considering validity questions and, of course, people from outside our judicial system look at that as something sort of comically quaint until, of course, they are in front of a jury trying to argue invalidity against the presumption. Not being able to modify the Seventh Amendment, apart from perhaps suggesting a third way in the post-grant opposition process, one of the things we looked at and one of the areas of recommendations that you will see is, is this phase of litigation in which we deal with subject elements of the parties. And one of them, Mark [Lemley] just mentioned, is the subjective the state of mind of the alleged infringer and [how] it plays out in willfulness. And here again we find in looking at the question balancing the purpose of willfulness, which is supposed to provide some additional deterrents against infringement, in a very, very large transactional costs that involve getting opinions that may be worthless for any other purpose whatsoever, and give people a real cynical view of the system itself, the cost of litigating the problems around the scope of the waiver of the privilege, and for the clients who face this

from the outset seeing their exposure tripled, potentially, against a standard that they really can't understand. So it is no surprise, then, that you see companies instructing their engineers, "Do not read patents."

When we are looking at cost-benefit analysis here of that incremental benefit that we get in deterring infringement, we have to consider [if] it is worth provoking a result that is 180 degrees from the constitutional mandate of using patents in order to inform the progress of science and the public knowledge. Willfulness is sort of an easy target in the panoply of subjective factors that we have to deal with in litigation. There were two others that you will see in the report that have to do with the state of mind of the patentee. One has already been referred to as "best mode," and although it does not come up that often, when it does it is a real side show, and an expensive one in terms of discovery, and one wonders what it actually gives us in terms of benefit over and above the other provisions of section 112 in motivating the parties to do a good job in describing their invention. We also, in that particular instance, run up against a substantial irritant and problem where international harmonization is concerned because, as in the area of first-to-file versus first-to-invent, we are the only jurisdiction in the world that employs best mode. And those who try outside of our country to harmonize their efforts with our system find this to be a very, very puzzling difference.

The last one of these is inequitable conduct, also referred to. I think Mark [Lemley] said if section 105 were really used very much, he would be able in cases where it was invoked successfully at the Patent Office to be able, in every one of those cases, to establish an inequitable conduct claim that would get past summary judgment, which is a little bit of an example of why this particular subjective element, although it is perhaps alleged less frequently these days and perhaps less of a practical problem because it is decided by judges rather than juries, nevertheless appears to be more of an inefficiency in the system, or cost in the system, than is justified. The additional burden on discovery, the additional burden on the plaintiff from having to consider whether it is counsel who might be participating as trial counsel, can actually take part in the litigation and trial of the case—all of those inefficiencies have to be weighed against what is probably a very, very statistically improbable incremental assistance that you get in making the system work, from having this aspect available to the parties to litigating their cases. So, one of the things that you will see in the report is that we have suggested that these elements which deal with state of mind either be eliminated or be substantially mitigated in a way that reduces their impact on the unpredictability and the cost of litigating disputes and patents.

REINES: Could I pitch just one minute on that? Just on willfulness, one thing to keep in mind is that in [the] Federal Circuit right now is the *Knorr-Bremse* case, which looks to be the palette from which they can re-write willfulness law altogether. I know Congress right now is deliberating based on what I have heard from committees on some willfulness reform, and the FTC obviously is wading into those waters as well. I would just suggest that all of those efforts wait to see the outcome of the *Knorr* case so that we can see what the Federal Circuit has done to cure that area, be clear what the law is in terms of getting some stable foundations from the *Knorr* case, and against that background can determine what, if any, reform is appropriate. Thank you, Pam [Samuelson].

SAMUELSON: Great. Would any of the other panelists like to do commentary? Shall I open it up?

LEMLEY: . . . I was quite interested to hear that one of the recommendations was, as I understand it, either eliminate or put substantial constraints on the inequitable conduct defense. Maybe understanding more about what the NAS proposal actually is would help in this respect. I guess I am a little nervous about the effects of a rule that said there is no inequitable conduct defense, not because I think the inequitable conduct is rampant today and, indeed, you know, there are lots of frivolous claims of inequitable conduct asserted, but because I fear what would happen if we sent a message that there was no punishment for lying or failing to disclose evidence to the Patent Office. And I wonder whether you guys have thought about that and what you might say about that.

POOLEY: No, indeed that issue is reflected in the report because it was a big part of our deliberations in every one of these cases, I think. We looked at what is the real objective, what is the goal of the particular element, and how central [and] important is it. Can you get there by using other methods than this one, and what is the cost? So that analysis is in the report. And I do feel a little bit constrained about talking about the details of exactly what we have recommended because the thing was not here in time.

SAMUELSON: So something to look forward to for Monday. Questions, comments? Yes, in the back.

. . . .

PASAHOW: The question is does the presumption of validity affect the ability to get a summary judgment in litigation. And for those of you who are not lawyers, summary judgment is a motion you make before trial and it is decided just upon written submissions of whatever the relevant evidence is. And technically, I think the answer is it shouldn't because the

question for the summary judgment is, “Is there any evidence on the other side?” And if there is any evidence, you are supposed to deny the summary judgment. It should not matter whether ultimately the question is, “Is that evidence going to be sufficient and meet a mere preponderance or a clear and convincing standard?” In putting aside that theoretical issue, in my experience, I have not seen trial judges get held up on the issue of whether it is clear and convincing or preponderance for summary judgments. On the other hand, there is the aura that this presumption puts around patents that I think sometimes does impact judges, at least subjectively. In making that whole aura go away, it might impact things like summary judgment more than we can guess.

....

RAI: I take it that the burden of the question was, isn't it interesting that the Federal Circuit, at least with respect to some of its judges, has been trending towards a plain meaning version of claim construction so that there is not nearly as much need to look to the PHOSITA, for example, or to factual issues more generally. I think that this is part of the—I mean, I could speak at great length about why I think this is part of the Federal Circuit's desire because it feels like it is the most competent actor in the system to try to really control all aspects of the system. It is not a crazy position to take for the Federal Circuit to believe that it is the most competent actor in the system, but I do think that that means that the PTO gets ignored to some extent. Now, the only way in which it does not get ignored, as I have indicated, is in the context of patent issuances and the clear and convincing evidence standard gives more deference to the PTO than perhaps was given by the predecessors to the Federal Circuit. But with that small exception, it seems to me that that is a sort of indication of the Federal Circuit's wanting to kind of root out factual issues altogether so as to have more control over the system.

JANIS: I was just going to say I think the question raises an interesting point about linkages between the presumption of validity and other issues. For example, suppose we did change the presumption of validity, making it apparently easier to invalidate patents. Would we get an equal and opposite reaction in scope doctrines? We start construing claims to preserve their validity, really. We see other changes at the Federal Circuit that liberalize scope doctrines going back the opposite direction where they have been trending. What would happen? Who knows? But I do think it is important to see a change to the presumption of validity might well cause a cascade in changes in other areas, we should not look at it in isolation, I don't think.

LEMLEY: Going back to Mark [Janis], one of the things that has always struck me as remarkable about prosecution practice distinct from litigation practice is exactly how little claim construction seems to matter in the prosecution process. We get to court and we fight over the meaning of words that you would not possibly think could have a disputed meaning. There are Federal Circuit decisions interpreting the terms “a”, and “or”, and “to”, and “when.” But none of that seems really to happen in prosecution. Maybe it is just a function, again, of the time constraints and how detailed the analysis is, but we seem to sort of skate through prosecution without substantial discussion about what the terms mean, and so there is a bit of a *tabula rasa*. The Federal Circuit’s later change in how we will interpret those terms may not affect prosecution as much because it is just not being thought about as much in prosecution.

RAI: There is an obvious reason it is not thought about as much in prosecution. You think about those terms like “on” and “in” and all that only when you are confronted with an infringer who says that “on” and “in” and what have you do not take the infringer outside the scope of your claim, so—

LEMLEY: You see it for validity too, although it is often an infringement driven doctrine.

REINES: Just a couple comments. One is I think there is just a practical problem if you are going to attempt to run some sort of concordance between the law at the time of prosecution versus at the time of enforcement or district court litigation. I mean, there are all kinds of areas in law that change all the time in radical ways, and so I think we have to be somewhat humble about our ability to bring that into sync, on the one hand. On the other hand, I think the point was addressed, actually, by Professor Lemley’s comment that, really, if you think about examination it is sort of a reasonably good once-over pass, and that that is not going to get into the level of going through the dictionary library and then to experts and what they understand this to mean. So I think that is addressed in the sense that we have to recognize that there is not full blown claim construction of the style of *Texas Digital* or anything else taking place during prosecution, in general. I think the way that the Patent Office attempts to address this, and others can address this in more detail, is through assuming the broadest general meaning of the claims, and maybe that rule needs to be given more vitality in order to address the practical reality that the Patent Office is not going to perform a full blown claim construction on every word in a 100 claim application.

....

PASAHOW: The point was that if courts gave deference to opposition proceeding statements about claim construction, that would eliminate some uncertainty, well, a lot of the uncertainty. It is a good point, but often as you are talking about the validity of a patent, the issue of claim construction is less intense because everyone who is challenging the patent, and the examiner under the governing rules who is looking at it, simply assumes that the words have their broadest meaning or the broadest meaning they could have to one skilled in the art. Often the examiner is that person, too. So the issue does not come up as to every word in the claim that is going to get litigated about when you start comparing it to a product. And whoever's product it is is trying to find some word that arguably doesn't apply.

LEMLEY: It also may depend a little bit on the structure of your opposition proceeding, right? Is this a proceeding in which we are going to have Administrative Patent Judges write opinions giving the reason for rejecting a challenge, in which case they may be explaining why they think that the patent has a particular scope, and therefore avoids the prior art? Or are we going to fall back, in essence, on a Prosecution History Part II approach in which my representations in front of the Administrative Patent Judge may be binding or helpful in interpreting the meaning of the claim because I made them?

[Question from audience member not transcribed]

RAI: Although presumably, even if we were going to give full deference to whatever the opposition proceeding yielded with respect to constructions in particular context, if there was nothing said about other words, there would be nothing to give deference to, just as there is nothing to give deference to with respect to the PTO's failure to examine particular issues like Best Mode, or what have you. So, I am not sure it ends up being such a big issue.

[Question from audience member not transcribed]

RAI: Well, that is what I mean. And then those would have to be—I would assume that that would just be litigated *de novo* because there—well, probably to some extent *de novo*, anyway—because there would be no prior opposition proceeding holding on that question.

LEMLEY: Well remember, of course, *Markman* is a question of law and under *Cybor* there is no deference even to district court determinations of what a term means, so the likelihood that there will be deference to the Patent Office Administrative determination of what a claim means seems dubious to me, so only if you actually appealed the opposition to a Federal Circuit would you get a defined meaning of the claim term.

RAI: Well, [the] FTC recommends that, as a part of the opposition proceeding legislation, Congress mandate deference on questions of law.

. . . .

V. INDUSTRY/INSTITUTIONAL ISSUES PANEL

Panel:

Carl Shapiro, Haas School of Business, University of California, Berkeley (co-moderator)

Mozelle Thompson, Commissioner, Federal Trade Commission (co-moderator)

Robert Barr, Cisco Systems, Inc.

Bart Eppenauer, Microsoft Corporation

Gary Griswold, American Intellectual Property Law Association

Sean Johnston, Genentech Inc.

Jeffrey Kusham, Sidley Austin Brown & Wood and BIO

Jay Monahan, eBay Inc.

Ron Myrick, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP and U.S. Council for International Business

Kulpreet Rana, Google

Robert Sacoff, Pattishall, McAuliffe, Newbury, Hilliard and Geraldson and ABA Intellectual Property Section

Michael Schallop, Symantec Corporation

David Simon, Intel Corporation

Herb Wamsley, Intellectual Property Owners

SHAPIRO: Let us get started. Now that Commissioner Thompson is here at my side, welcome. I am Carl Shapiro. This is the Industry and Institutional [Issues] panel. We are going to try to really bring in industry here more directly and see if we can have ideas into action as promised or suggested. I am a professor here at the Business School. I come more from the antitrust side, but I have long been interested in antitrust and intellectual property issues. I think also a lot about competitive strategy, so I am particularly keen to hear today from our wonderful panelists how the patent system or its flaw are really affecting business. My perspective—I put the cards on the table right at the front—is if the government is going to be granting monopolies, they should do it when there is a good reason to do so and not just because we have got a process that favors people who are hoping to get such grants.

THOMPSON: From the government's side, there are very few good reasons to do so.

. . . .

SHAPIRO: . . . We have great industry representatives here and we have representatives of several associations of attorneys. I think together we can really get a sense of how some of these FTC proposals are being greeted by people who live and breath this in their businesses and through all stages of the patent process, through attorneys who know these far better than I do.

I think you hopefully have heard the other panels, [and] I think the problems are well set up. We are going to go right into really how does this affect companies and where are the bar associations at on some of these proposals.

We have heard a lot about concern about patent quality, [but] what does it mean in practice and what [about] the people who know these things best as practicing attorneys? What is their reaction to these proposals? I think it is very important here to bear in mind that even companies that have a lot of patents do not necessarily think, "Oh, stronger patents, more patents is better." It is not that simple. In fact, many of them with many patents are concerned that there are too many bad patents out there at the same time. In addition to the industry representatives, let me just mention those associations and the people can speak more about that: the ABA Intellectual Property Law Section, the AIPLA, the Intellectual Property Owners, BIO, and the U.S. Council for International Business. One of the good things here is that a number of these organizations are in the process of responding to evaluating the FTC proposals, so we will be able to hear where they are at. In most cases, they do not have the formal final approvals yet, but we will be able to get an early read on when they are coming out and I think that is very, very helpful.

First, I am going to give each company representative a few minutes to tell us about how the patent system and flaws in the patent system really affect his company. What do they care about? How is this causing problems in the real world for their businesses? And where is their company most concerned and most interested in change? Then, we will spend most of our time walking through the FTC proposals one after another and getting the sense of where people are at. Is there a consensus or not on certain proposals? . . . [W]e start with Robert Barr from Cisco.

BARR: Okay, thanks Carl. First, since you are asking us to do this, I want to object to the dismissal of this kind of evidence as anecdotal.¹ I have heard it a few times now in reaction to the FTC Report and one person's anecdote is another person's case study is the way I look at it. I think the FTC did a great job of synthesizing a lot of anecdotes into a very coherent report that showed, I think, what you are about to hear: that some of us in the industry, that more than one of us in the industry, have some issues. That said, I want to say we are a stakeholder in the patent system, we are a major owner of patents and an investor in the system. We want patent quality. We want patents to be respected. I do think it is pretty simple. Patents are like children and yours are good and everybody else's are bad, so our patents are therefore of high quality.

Secondly, in addition to being a patent holder, we are what I can only call a potential defendant, or a deep pockets, or a company with revenue, whatever you want to call it. So we have an interest in avoiding infringement. In fact, if I could choose my job and do it, I would say my job is to avoid infringement like I do with copyrights and trade secrets and laying down the law, as it were. But with patents, that is pretty difficult. We used to call it a minefield out there. Thanks to Carl [Shapiro], we now call it a thicket, which I think is a better image because it is not just a bunch of mines that we have to avoid, it is an overlapping morass of patents that is virtually impossible to avoid. In corporate-speak, that is a risk management problem of the highest order. It is virtually impossible to avoid all those patents because of the sheer number of them, but in addition to that, the unpublished patents, the published patents that you do not know what they are going to turn out to be, the numbers are pretty big, and Intel representatives have quoted numbers like 80,000 patents on a microprocessor. It is just a clue to what is going on.

Why have we gotten to this situation? For one thing, to many people, patents are a business in and of themselves. They are a revenue-generating operation that has high margin and relieves them of the terrible responsibility of bringing innovative products to market. They just tax others. So patents are a business. But, secondly, the reason we are in this situation is because those of us who are involved in the thicket contribute to it. We stockpile patents. We increase every time we find out that everybody else is increasing patents, we increase. So you have a vicious cycle of stockpiling of patents, mutually shared destruction. What is wrong with that? It is

1. *See supra* p. 1068 (remarks by Q. Todd Dickinson, General Electric (former Director, U.S. Patent & Trademark Office)).

a drain on resources, money, engineering time that could better be used for innovation. That is all I want to say. Thank you.

SHAPIRO: Thank you. Next, Bart Eppenauer from Microsoft.

EPPENAUER: Thanks. It is a pleasure to be here today. I will put my comments in the context of the Report itself in terms of the issues that we see. And first and foremost the issue of the law of willful infringement, and it is really good to see the report come down the way it does, and we are hopeful that the *Knorr-Bremse* decision comes out the right way. But, regardless, we wholeheartedly agree with Judge Whyte that it is a real pain for companies to deal with willful infringement allegations. We face it in just about every case that comes against us, regardless of whether we had any knowledge of the patent, if the patent was issued the day and the next day we get sued. We will get a willful infringement allegation based on some press release, perhaps, that was issued about the filing of the patent five years previous. I mean, we really have had to deal with a situation like that, and it is one where we completely agree that willful infringement ought to be limited to cases where there is specific written notice and, going even further, specific identification of patents and the claims, and how the claims apply to the products so it is really before that willful infringement allegation triggers, you have that.

Another difficult or tenuous willful infringement allegation that we faced before is in cases where a company's patent was cited in one of our own patents in prosecution, one of many thousands of patents we have, and it just so happened that this company's patent was cited, and now we are fighting a willful infringement allegation because it is just not clear what kind of knowledge is required. We certainly do not think that that kind of thing is at all sustainable and would put an incredible burden on companies. So we are really happy to see and we fully support the willful infringement change in the law. We hope the Federal Circuit does the right thing, and look forward to that decision, as well as the waiver issue on attorney-client privilege. That really is a difficult proposition, and we fully support having no adverse inference established based on whether or not you decide to disclose your attorney opinion because you just do not know how far that is going to go with a particular jurisdiction, if you are going to have to give up all your trial counsel notes and things, that is a difficult thing. First and foremost, that is really an important point to us.

The second point, perhaps, in relation to the post-grants review proceedings, I think it is pretty clear that there is a major increase in patent litigation in the IT industry and certainly Microsoft faces an increasing number of patent lawsuits where we are the defendant. And on top of that, we have many many more assertions prior to litigation where we spend a

fair bit of time negotiating and analyzing those assertions. In that respect, I do echo some of the comments I heard earlier today which is, it is not just an issue of what are the questionable patents, or what are the bad patents, if you will, but it is really an enforcement issue. . . . I think in that context, the post-grant opposition would be very helpful to try to avoid litigation disputes.

And one of the things that is interesting and [what] we would like to see how this plays out is the time duration. One year from issuance in some industries might work really well, and in a lot of the cases that we see come our way, it is many years after the patent is issued that we just first learn about the patent that we are sued, and it is not going to be real helpful to us, the post-grant procedure, if you can do something, some threat of a lawsuit or an actual lawsuit where you can institute this proceeding, and in some industries like ours where there are so many thousands of patents out there in the information technology space, it is kind of difficult to monitor all of that and to select the ones that you would want to pursue in an opposition proceeding. So it is going to be interesting to see that. That is it for me for now.

. . . .

SHAPIRO: Okay, well then we have Sean Johnston from Genentech.

JOHNSTON: Hello. Thanks. I will start by commenting or making the observation that Jim Pooley's comment earlier today resonated with me when he said the so-called sand in the gears are really in the enforcement system,² and that is the area that we have the most concern with. And, in particular, I will go quickly through three areas where we think the FTC has made some good observations.

First, is in the need for a new and improved post-grant review process. This was the topic of the discussion of the panel this morning, so I won't belabor the point, but suffice it to say that, like many other businesses, we encounter bad patents and have a hard time dealing with those. We end up in litigation too often dealing with bad patents, patents that we believe are invalid, that eventually are found invalid on appeal, and it is an extremely costly, time-consuming process not only in costs from the perspective of paying outside counsel to litigate these matters for perhaps many years, but also the opportunity costs of taking away scientists and engineers from work that they would better be devoting to scientific research, rather than to depositions and giving expert reports and the like.

2. *See supra* p. 1116 (remarks by James Pooley, Milbank, Tweed, Hadley & McCloy LLP).

The second thing is, as a number of people have commented, reigning in the proliferation of what we believe are unmeritorious, intrusive, willful infringement claims that, I am afraid, too often are brought just for strategic coercive purposes to try and exert the maximum amount of pain or potential pain on a litigant. And I think in this area, in addition to whatever the Court of Appeals may decide in the *Knorr-Bremse* case, at a minimum, we should codify some requirement that there be a bifurcation of the willfulness issue away from infringement and validity issues, and let the patent owner make out a willfulness claim, if they can, only after they have established validity and infringement of their patent claims.

Regarding the FTC's comment on the so-called thicket of patents, I encourage focus on one particular patch or aspect of that thicket, which I know has been the subject of discussion by a number of different panels and groups along the time line here, and that is the patents that are directed primarily to materials, methods, and machines that are used solely in research activities. So some people would refer to these as the so-called research tool patents. The point here is not to take away or put these patents sort of in a second class status, but the fact of the matter is these patents are proliferating in number. Again, I may be hung up on transaction costs, but dealing with these sorts of patents on a one-off basis is extremely time-consuming, there are tremendous transaction costs, and I think we need to find a better way of dealing with that. For example, I think it is worth taking a look at the scope of the experimental use exemptions, seeing if there is some possibility of making some changes there, perhaps finding a market-based, more efficient way to license these things such as through a clearinghouse akin to the Music Copyright Clearing Houses, and just overall. Finding a way to deal with these in a more efficient way.

My last comment, then, will be just a general observation. I cannot help sitting and hearing the comments this morning, in particular people commenting—I think someone referred to it as the “willfulness game,” the proliferation of just an excessive number of inequitable conduct claims, the sort of cynical use of the Eastern District of Texas for filing cases. I think you cannot help but hear that and come to the conclusion as was once said, that we have met the enemy and he is us. I think it is perhaps ironic if we take a step back, this same group that is organized here today, that is complaining about this, that were often the ones who are going back to our offices, to our outside counsel, and actually making these sorts of claims, making these sorts of filings. At the risk of sounding like I have been in Berkeley too long, I think we all should take a step back and perhaps exercise a bit more self-restraint, self-discipline, and take a more far-

sighted perspective on how we approach these various issues and not rely exclusively on legislative or regulatory reform.

. . . .

SHAPIRO: Next, Jay Monahan from eBay.

MONAHAN: Thank you. If some of these problems are the sand in the gears, then eBay is in the business of building gears. We have built an E-commerce platform which, as you know, has met with enormous success. The interesting thing is, almost five years ago to the day I started at eBay, the only time I ever heard the word “patent” was if somebody was referring to patent leather shoes being sold somewhere on the eBay site. And there was a long period of virtual silence. Never got a letter, never got lawsuits, nobody ever talked about it. Then, starting probably three and a half years ago we started to see more letters. And the letters sometimes were followed by lawsuits. And many of the letters, in fact, I would hazard to say most of the letters, when you actually dug into them, you realized that were either facially ridiculous, or an incredible stretch of construction, and in my view if you applied a Rule 11 analysis to it, it never would have exceeded Rule 11.

Now, in fact, there was one case where I got a letter and I said, “You know, you have got to be kidding me.” I cannot tell you how many times I have said that, but I went to Google to the Google News Groups, which I pray and thank Google for every day, and in two hours found dispositive killer prior art. And I said there is something wrong with this picture. It has driven the cost of my life as a lawyer at eBay up. I now spend more of my time on patent issues, both our own portfolio, as well as defensive issues, than any other single issue, which was clearly not true a few years ago. We worry about these letters because of things like the willfulness standard. It would be great if I could just say this is ridiculous and throw it in the trash can. We obviously can’t do that. We engaged in a very reasoned analysis and, in some cases, we get very expensive opinions of counsel which, in some cases, sit on the shelf because you never hear again. In fact, most of the time you never hear again, but that does not mean it is free to me. We also get a lot of what I call “squirrely” letters and this is an issue which will have to be considered when we talk about what a willfulness standard ought to be because many times the letters do not say “Dear Jay, Your X product is infringing my patent,” it will say, “We noticed that you recently announced your such and such feature. We think that you might be interested or benefitted from taking a license to our portfolio.” So are they accusing me of something? Well, I do not know the answer to that, but I can guarantee you if there is litigation, they are

going to say they did, and I am going to be dealing with that issue in litigation.

Lawsuits. Lawsuits, we are in a whole new world. The presumption of validity is a problem. It is something which is trumpeted by plaintiffs, it is something which is difficult to get over. Summary judgment is also difficult to get over. And I think that there is something that is outside the scope of this conference, which is what about the role of the judiciary? Because I think there is a reluctance among some members of the judiciary to do what I would say is the right thing, which is to grant summary judgment, to issue a Markman ruling that construes the terms and lets the chips fall where they may, and I do not think that happens as much as it ought to.

And, finally, big verdicts and big settlements. Verdicts happen and, by the way, I am litigating in Marshall, Texas, and in Delaware as we sit here today, and I have to balance as an eBay lawyer the need to fight these cases to demonstrate our resolve against these ill-conceived patents, but at the same time do what is right for the company when it comes to balancing risks. And, unfortunately, as the FTC Report points out, the balance has been disrupted. If there was a balance, there no longer is a balance.

And we are here pleased to be a part of this conference. We have some thoughts on some of the reforms that make the most sense which we are going to talk about in a minute, there are others which we have not yet formed full opinion on, but really welcome the opportunity to finally try to do something about this important area.

SHAPIRO: Thank you, Jay. Next I would like to turn to Kulpreet Rana from Google.

RANA: Thanks. So my perspective on this issue has really changed over time. I was thinking about it earlier and I remember when I was in law school thinking about the patent system from a very theoretical viewpoint and there are these interesting issues and tensions, and then I had the good fortune of clerking at the Federal Circuit, and that was also like a fairly academic perspective, though, thinking about some of these patent issues. You are still in a bit of an ivory tower as an Appellate Court. Next up was law firm practice, and that was a bit of a transition period. But it was not until I actually entered industry at Google that it became very evident to me what the real world impact is of the patent system. In short, I think it is really just a mess from the perspective of trying to deal with the issues that you face when you are in-house. As with other people on this panel, Google approaches this issue from the perspective of a company that obtains patents and also has patents asserted against it. And, you

know, I think it is hard to think about some of these things, generally, because there are places where the patent system is probably working fine.

Making generalizations tends to raise kind of concerns on other sides. But there are also places where it makes it difficult as a business person to provide the kind of advice that you need to, and one of the main high level areas of that is just in terms of the—and a few people have mentioned this before—the lack of certainty or predictability that is engendered. This ties into the examination process, and if you don't have a clear sense of what the quality is of patents that issue or what their value is, it becomes hard to make business decisions about that. There are those who would take advantage of that ambiguity by, you know, in conjunction with the presumption of validity, to try to extract value. And certainly the fact that litigation is one of the main ways of resolving that right now does not help because it is a high cost alternative, and so that encourages settlement even where it may not make sense. But that is just one context. That same ambiguity and uncertainty comes into play in other areas, as well. If we are trying to assess the value of patents that we have ourselves for purposes of licensing, it is difficult to do because of the uncertainty. If we are interested in acquiring another company or a portfolio, it becomes hard to evaluate that because of the uncertainty.

For us, having something that would create a little bit more certainty would help with making business decisions. So we certainly think that some of the FTC's recommendations are a useful step in that direction and we are happy to kind of participate in that discussion going forward. And I am going to grant the rest of my time to my colleague, Michael Schallop.

SCHALLOP. I wanted to just set the background for a couple of scenarios that are practical scenarios that I think similarly situated companies, software companies, of about Semantec's size will run into from an inside counsel perspective. So Semantec is primarily a software company, which means that we develop products and release those products in generally a six to nine month time frame. You are talking about a pretty rapid development cycle in a product life cycle that in a software product space may not exceed three, four or five years. It is characterized, I think, accurately in the FTC Report as an area where there is incremental innovation. We come out with a new product feature and, very shortly after, competitors, once they see that feature, if they had not already been developing it for their product, will soon enough develop that similar or maybe an improved feature along the same lines in their product. It is very front-loaded, kind of like law school, all the work and rewards are generated by the initial product development. The industry, because it is incremental innovation is correctly characterized, I think, in the Report also as a defen-

sive patenting area, which means that it is a numbers game. You have an incentive to try to patent as much of your distinguishable product features that you can get through the Patent Office, which from hearing from the staff, that is probably one area where we have certainty. You have a pretty good chance of getting a patent through, depending on claim scope.

As a practical matter, that means that we need to file patents on those distinguishing features, on key product features, and do these reviews for products, you know, fairly often. At the same time, you have engineers and developers who are under a lot of pressure to get new products and new features out. With that in mind, I think that the focus in some of the recommendations on patent quality may be the best way to start to make sure that we can address what is really, and I think Bob [Blackburn] would address it, as the MAD game. And it is always going to be a numbers game, even if we try to address some of the enforcement issues, whether it is standards of proof and presumptions with obviousness, because in a numbers game, just having patents issued, whether or not they are ever going to stand up in court, serves their purpose, depending on the different contexts with certain competitors. I do think that addressing the patent quality up front makes a lot of sense and has the advantage of putting more of the burden on the patentee to prove the patent is entitled to get through the Patent Office, rather than post-grant procedures which, again, the transactional costs are going to be born by the potential defendant or targets.

The second scenario that we often face is, if you are a company that has a revenue stream, you are inevitably going to be a target by either your competitors and/or what the report refers to as “hold-ups,” “patent hold-ups,” or referred to earlier today as “trolls.” Addressing the patent thicket issue, I think, requires you to have really good information as to what patents are out there and the Patent System today is designed to disincent you from actually studying your competitors or other third party patents out there, which I think really disrupts the balance of the Patent System, which is, you know, the disclosure is the exchange to encourage innovation and is the basis for the Patent System’s goal of evolving technology.

SHAPIRO: Thank you. So our last industry representative here in this first part is David Simon from Intel.

SIMON: I thought the best way is to try to make it a little bit more clear as to how the uncertainty is a problem, use something that Professor Shapiro may be aware of in terms of LBJ’s One-Handed Economist. Early on in my career at Intel, I got called in to handle a problem. It was a problem with nine zeros after it, and I, just having been outside counsel for my entire career, started with, “Well, on the one hand,” whereupon the Senior

V.P. who I was talking to's hand came down on top of mine and said, "David [Simon], if another hand hits the table, I cut it off. What do I do?" This guy was a little scary, by the way, so that was particularly unnerving. But, the problem that we all, those of us who are in-house, all face, is we have to give advice on what are we going to do and we are facing a huge amount of uncertainty. If you just think about some of the FTC issues such as the willful infringement issue, I am the guy they [the company executives] turn to, saying, "What do we do?", whenever somebody sues us. I have to say what we are going to do. Well, that is an opinion. Immediately I say what we are going to do, now is that going to be open for discovery? It raises a whole host of issues that just completely raise too many uncertainties. Similarly, we get these patents in which you take one look at and you say, "You know what we ought to do with this patent," but you have to go through all that analysis, you have to go talk to your engineers, and it is very distracting and it is very taxing. And, in fact, it also causes us to, of course, both for prior art purposes and to make sure that we have lots of stuff out there of our own, it causes us to file what I personally think is an inordinate number of patents, and every year my CEO says, "Go get more," to the point where my patent filing budget and prosecution budget is now more than half the size of our Corporate Research Lab's budget. That, to me, seems to be out of kilter. And by the way, that does not include litigation—that is a separate budget which is also roughly the same. You are looking at a huge tax on the industry and you are looking at a whole host of problems that come with that. Every case that we have brought, we have got to take our leading engineers, particularly the most senior ones who really have the intimate knowledge of what is the prior art, pull them off of the projects they are doing—and, by the way, these guys work eighteen, nineteen hours a day, six to seven days a week, they are incredible—and say, "I need you to help me find prior art on this," or "I need you to help me explain why we do not infringe on this." And that is a huge task which I really do not think society is getting the benefit for. Just to give one practical example. . . . We got sued several years ago on a patent where we felt we could get the license for \$2 million. By the way, this is the case that we used the term "patent terrorist" which got us sued for libel. But the point being that it cost us \$3 million of outside counsel fees to win on summary judgment and get it affirmed on appeal. We probably could have gotten the license for \$2 million, and I am not throwing into that literally hundreds if not thousands of hours of various engineers' time on helping us on this case plus in-house counsel work on this case, as I think my time has some value, at least. And when you looked at that and said what was the right thing? Should we have paid?

Should we not have paid? I asked my CFO that and he said we did the right thing because it only cost \$3. I said what if it was \$10? And he said, "I am not going to give you that answer today." Thank you.

SHAPIRO: Thank you. Thank you, all. So next we are going to walk through each of the FTC's proposals in order. I am going to frame it up and then turn to certain of the panelists to give reactions, where they are at on that proposal, pluses and minuses. The goal here is so we can really hear, try to learn where there is consensus, where there is not, and get a sense of where this process could go from people who really live and breath this stuff. So let me start. I will read each of these briefly just to make sure we are all on the same page since you may not have your handy dandy copy in front of you.

FTC Proposal 1, this is the post-grant review: "As the PTO recommends, enact legislation to create a new administrative procedure to allow post-grant review of and opposition to patents." There was a whole panel on this, this morning. And yesterday Rob Merges, I think, laid out some of the basic facts—180,000 patents a year are issued, seventeen hours per patent on average by the examiner, it takes over two to three years. I think he gave a number of \$3,000 dollars spent for a patent. I think Mark Lemley gave an impassioned piece this morning on why the PTO's structure is not set up really to [thoroughly examine applications]—it is a quick look. And I think maybe Joe Farrell described it as "error prone," but of course there would be those that would dispute that. So, at the same time, there is a reexamination procedure, but it is basically not used at all. I think Rob Merges reported that it was only used twenty times in the past five years. Okay, so a trivial number of times. That is not working, at least not useful and effective.

I will add that the National Academy of Science's Report calls for an Open Review Procedure, basically of third party challenges before Administrative Patent Judges at the PTO, so they are on the same page here, or close to it. Where are folks at on this? Is this something that everybody wants and can go forward? And, if so, how would it be designed? Because, as a number of people have said, even if you want this, how are you going to structure it? The devil may be in the details. I would like to turn first to Robert Sacoff.

SACOFF: Thank you very much. I am the Chair of the ABA IP Section, and we are one of the organizations that Professor Shapiro was referring to when he talked about some of the organizations being mid-stream in their policy formulation, so I have to state the disclaimer that my views as I state them are not really capable of being attributed to the ABA, which really requires a lot of procedures to go through, or the ABA IPL

Section. . . . We have had a lot of really good and hard work done at the committee level, resulting in resolutions in some cases in the various recommendations, and some other cases, not resolutions, but reports. The post-grant opposition procedure is one that the developing view, as I will call it, is to support. We have a resolution that will be adopted, finally, or voted down, and that is always possible, at our June summer conference in Toronto, favoring in principle legislation creating a post-grant opposition review procedure in which the patentability of issued claims, without any limitation on issues subject to the procedure, can be reviewed by Administrative Patent Judges, the Board of Patent Appeals and Interferences. And some of the details, obviously, are yet to be determined. It is always a major step when you create a new procedure, and I do not think we know exactly what it is going to look like yet, or what we would like it to look like yet, but the suggestions in the deliberations and the developing views include filing an opposition within nine months of the date of the patent grant, allowing all patentability issues to be challenged, not just obviousness or nonobviousness and novelty, to provide complete *inter partes* proceedings, some discovery—we do not quite know how much discovery because that affects a great deal the cost and the length of time that it is going to take. The view is that we would like to see such a challenge conclude within a year and to have appeal ability by any of the parties to the Court of Appeals for the Federal Circuit.

SHAPIRO: Would you say it is the tentative position that a cost-effective post-grant review procedure is really crucial to having the patent system work properly, and we do not have that now?

SACOFF: I think that is a little bit of an overstatement to what the resolution is. This is a procedure that we are in favor of, and we would not be in the favor of it if it were not considered an improvement to the patent system. We start putting adjectives about crucial and indispensable, and I am not sure that those are going to be in our position, but we favor it.

SHAPIRO: Okay, fair enough. I would like to go next to Gary Griswold, then.

GRISWOLD: Gary Griswold, I am representing the AIPLA. I am past President of AIPLA, but in this particular circumstance, I was Chair of the committee that put together the report that responds to all of the recommendations of the FTC Report. We are further along than ABA, apparently. We have the report in its basically final form, closely ready to go. I can tell you [that] we support basically six and a half of these guys and we don't support three and a half. So I can tell you which ones those are if you want me to later.

SHAPIRO: Yeah, why don't we do that? We will go through one by one, but let's focus on the first proposal now.

GRISWOLD: And that is what I was going to do. . . . And what I will say on that is that we do support oppositions. We have developed the details of a proposal relative to how opposition should be handled, and that was approved by the Board this week. It does involve a nine month period for bringing the opposition. We do not believe that this process should be available, except on agreement of the parties, throughout the life of the patent. In other words, we want to walk before we run. . . . Our deal is that we would not include all issues of patentability, only those issues that can reasonably be tried without significant discovery, and those are 102, 103 based on patents and publications, 112, first and second paragraph, no best mode, non-statutory double patenting. It would be based on the written record. There would be cross examination of the affiants put in the evidence. There would be a hearing before the Administrative Judge. There would be a limited estoppel. . . .

SHAPIRO: Thank you, Gary [Griswold]. Next, Herb Wamsley.

WAMSLEY: Thank you, Carl [Shapiro]. I should say who Intellectual Property Owners Association is, particularly since three members of the Board of Directors are on this panel, which causes me to state things carefully. As we go through these resolutions, I will be giving our tentative view, which has passed the first review by the Board, which will be reviewed again by the Board next week. IPO's members, which really overlap as a practical matter a lot with the ABA and the AIPLA, but the members of the Board are Chief Patent Counsel of larger companies primarily, including Microsoft and 3M and Intel. We think we are in favor of post-grant opposition. We are still trying to sort out the details, not quite as far along as AIPLA, but we are definitely in favor of it. We are looking at two models, I guess, mainly, which are similar, the FTC Report and the Patent and Trademark Office's *21st Century Strategic Plan*. It was issued in 2002, which has a very detailed proposal.

I think there is not complete consensus yet on whether the time period for opposing a patent post-grant should be a limited period such as nine months or a year, or whether it should be a longer period. And there is a lot of variations on that. As you may have heard earlier in the program, the PTO, for example, proposed a period for opposing for several months post-grant plus the opportunity to propose any time during the life of the patent, and I believe within a four-month period after you are subjected to a reasonable apprehension of suit. So that is one area.

I think another area we are still trying to sort out is just how broad these proceedings should be, how many issues you should be able to raise,

and what the costs should be. But I think IPO members—and my feeling would be large U.S. patent holders in general, seem to have a pretty broad consensus on needing a procedure post-grant that is substantially more expansive than the *inter partes* reexamination proceeding that was enacted in the American Inventors Protection Act in 1999. And on where we are at, I would say that [for] IPO, the post-grant opposition is one of our big three [issues], at least, if not the biggest one.

SHAPIRO: Good, thank you. I would like to turn next to Jeff Kushan who represents BIO.

KUSHAN: Thank you. BIO is a trade association that represents the biotechnology industry, has a membership of about a thousand companies, and the only common trait about those companies—really 85 percent of them—is that they do nothing but lose money. And the only asset that they have is either a patent application or a patent, and so they are a bit sensitive about patent issues, probably more sensitive than any other industry. On the issue of post-grant opposition, most of the members of BIO strongly support a rigorous post-grant opposition procedure. That view is not uniform and, in large part, that non-uniformity is because the critical issue is what are the attributes of the system that have to be there and have to be identified before we can actually have a consensus view? And, in fact, most of the discussion within BIO so far has been to start to focus in on those attributes of the system. Many of the things you heard earlier today and that have been repeated are the variables that are in discussion now. I can touch on a few things and give you some insight into the deliberative process that is going on now.

One issue is, and it was foreshadowed in the comments from Eli Lilly this morning, is that, unlike most industries, there is a special need for certainty in the area of pharmaceuticals and biotech inventions. When you are about to launch a product, or when you are about to build a plant or when you are at that really critical part of development down the path, you do not want to have the patent thrown back to the Patent Office in a proceeding that could end up putting a large cloud over that investment. And so one variable seems to be the period of time during which one can raise issues, and I would say, at least with regard to the non-prior art based issues, there seems to be a view that about a year, or a little bit longer, than that might be the window that should be appropriate. It is important in this process to appreciate that you are going to have a trade-off in that time limit because most biotech inventions are not going to have a known commercial value in a year, but there is still enough monitoring activity that you can engage in to make a step in.

A second issue that seems to be supported is to actually extend the issues to 112 grounds. That topic, in particular, is a dominant topic for many patent applications in the biotech sector where there is not a lot of prior art—well, there is a fair amount of prior art, but the main issue in a lot of cases is 112.

The third variable that seems to be supported is the need to have better management of the proceeding, and here it is kind of a trade-off right now because many of our members want to have a simplified procedure for simple issues that does not make it a really expensive proceeding like litigation. Yet you also want enough adult supervision in the proceeding so that you know you are not just going to get a rehash of the original examination.

And then the last issue that we are struggling with is, there has been some debate about how to make the proceeding more rigorous, and that goes into the area of discovery-like activity in a proceeding. And many of our members, a small minority in total, but many of our members have lived through enough litigation now that they don't want to see the torture of litigation imported into a Patent Office environment.

And so, while there is a legitimate need to have experts and deposition of experts, there is a great reticence about turning it into a proceeding that essentially replicate[s] the cost of litigation for no benefit in the Patent and Trademark Office. I am going to stop at that point because we are still struggling with a lot of other parameters that have not been talked about in the discussions so far, and we do not really have uniform views.

....

SHAPIRO: Thank you, Jeff. Next, Ron Myrick who represents USCIB.

MYRICK: Thank you very much. First, I would like to make a little disclaimer. My views here are being expressed as my own. Except where I specifically attribute them to the USCIB, they are not the views of my firm or any client.

I am delighted to talk about this issue. I think it is an easy issue in one sense to support, it is hard as the dickens to make happen. When I got started in this profession a rather long time ago, we were privileged to be provided something called reconsideration at that time. Some of you will remember it. It was a pilot program. It was the forerunner to reexamination. So we have been working on making this kind of post-grant review work for a very long time. Have we succeeded? I do not think so. And I think the devil is in the details, absolutely. The comments that Jeff [Kushan] just made about cost are going to be determinative. The

real success of any post-grant procedure is going to be determined by whether or not it is used. And Dr. Harhoff's comments this morning were very worthwhile in regard to the success in Europe. However, he also made a passing comment, in that the numbers or percentages have been going down in Europe. And it is an important note because, frankly, I know some senior IP counsel of some major companies in Europe, and they have abandoned the opposition system in Europe. And why? Because they paint a target on themselves. So I think one of the issues, and it has not even been addressed in the panels this morning or thus far, is how do you handle the fact that having raised your hand to be an opposer, you have told the other side how interested you are in their patent, and you may not win that opposition. So it is a very important issue.

I think the other issue that is determining whether or not this will be a successful system [is] the issue of estoppel, whether or not you are going to be bound by what comes of this result and permanently bound, perhaps. Somebody mentioned *res judicata*. I do not think that *res judicata* is going to get very far if you want to be able to use this system and make it a success. So I think there are lots of devilish details to be decided in connection with opposition that will determine entirely whether it is a success. And, remember, it is only a success if people really use it, and we have been trying for nearly thirty years to make reconsideration, then re-examination work, and, still, nobody uses it.

SHAPIRO: Thank you, Ron [Myrick]. I want to just turn briefly to a few of the other panelists so they can indicate where their companies are at. Bart, where is Microsoft on this?

EPPENAUER: We do favor this and the devil is going to be in the details. We want to be able to use this procedure and, clearly, as Ron [Myrick] points out, within a one year time frame if we start opposing patents, that will raise a flag that we are very interested in [the patent]. If we lose [the opposition], I am sure we will be dealing with it for a while. . . .

SHAPIRO: Okay, Sean Johnston?

JOHNSTON: We are supportive of this. I agree with Ron [Myrick], it has got to be a system that is economical, it has also got to be fast and efficient or we will just be repeating the litigation process all over again.

SHAPIRO: But do you want to limit the time to the nine months or the one year?

JOHNSTON: I think that is a wise component of the overall process, to put some time limits and nine to twelve months seems like a reasonable one, somewhat akin to what the European system is.

SHAPIRO: David [Simon], do you want to speak for Intel on this?

SIMON: I think what you have is a real dichotomy between the bio and pharma and the electronics, software and probably much other. Generally no reason for me to challenge a patent unless it becomes a problem for me, because otherwise I would be challenging lots of patents that I have no incentive to challenge in the ordinary course, other than to paint that big target, as Ron [Myrick] said. So if, in the general case, if it has got a time limit, I won't use it much unless there is somebody I know who is going to be a problem for me out of the chute, and this is my best shot at them. If there is no time limit, I will use it a lot, and I think that is the real consideration. And I understand that the incentives in bio and pharma are very different, and it may even be that what we need is a two-industry approach or multi-industry approach.

SHAPIRO: Would it help if said maybe prior art could be handled one way and other issues another way? Would that help bridge this gap between the different industries?

KUSHAN: This is a good topic to engage on because I think it is something we have to start out. I think the 112 issues may be more time relevant, so even if we looked back five years, a written description as we have seen and applied five years ago compared to what it is today is very different as a legal principal. And also evidence in that area may change over time. I think one question is, what we do not want in the pharma bio industry is to have a crippled system to fight about our patents, take over the patent, and dispose of it in the PTO. And so maybe the question is, if you allow challenges after some window that we know we can take it back to a District Court and fight there because it is too commercially important to us to leave it in the hands of the PTO with the limited discovery or limited proceedings around it. And I do not know if that is something which is going to be digestible to the software and non-biotech sector, but I think the critical factor is [that] you just do not want to have your patent in the Patent Office when you have spent \$800 million getting a drug and you are about to launch. It is just a very uncomfortable discussion to have with your CEO. So it may be not the best fear, but it is a legitimate fear of these companies, and we have to find some kind of reality in limiting the access.

SHAPIRO: I think that shows that the estoppel issues, the ability to appeal relates to the time period. There is a complex set of factors that has to be crafted. We are not going to be able to do that now, but some of these associations that have grappled with this. It will be a really good next step to see what they are doing.

GRISWOLD: The reality of all this when we debated this for AIPLA was can we put together a proposal that actually has legs and can get through Congress, because we have been involved heavily in the

legislative front for a long time and the AIPA [American Inventors' Protection Act] was a big event. I do not think we have anybody here that is an independent inventor. I can tell you that there are issues here that are compromised based on what we think would be acceptable in the independent inventing community. For example, a limited estoppel. And also the idea of when you can bring these activities. So you have to keep in mind what is passable and what you can get started with. The other piece is, I still believe it is important that we walk before we run. We heard a lot about how the PTO operates, and I think we better be careful that we have a process in place in a nine-month period that works, and then maybe we can take it on until later on in the patent's life. That is our view.

....

MONAHAN: The other issue that I think is important, at least from our perspective, is retroactivity. Assuming you can do that, because if I cannot deal with patents that have been applied for or issued, say, since '95 or '92 or '93, then before there was a second-look policy, a lot of my problems are coming from a particular time frame, so I think I need to be able to apply this, whatever these procedures are, to those. And then, going forward, perhaps there would be a time limit. I actually like the idea of a time limit of some sort, but having basically all bets are off once somebody threatens me, and then, what was the reasonable apprehension of litigation, I would have some rights triggered at that point.

SHAPIRO: Let's summarize. My sense [is] there is a lot of incentive to do something, there [are] probably areas where people can come together, but work needs to be done to get that drafted, something that is going to work politically, and we will be talking at the end how to make things happen.

So on to [Recommendation] 2. The second proposal is: "To enact legislation to specify that challenges to the validity of a patent are to be determined based on a preponderance of the evidence." Of course, rather than the current clear and convincing evidence. Again, we have heard about that earlier today. I think many people would think, most people think, this is a very big deal. There are few people that think it would not matter, but I think most people think it would be a very big deal. I think part of his impassioned plea this morning, Professor Lemley presented very nicely the argument in favor of this, which I would summarize as saying, "Why should patents get that big presumption if it is such a quick look going on now?" That raises the issue of how this proposal interacts with other proposals. I think one could take the reasonable view, if you fix a lot of the other problems so the patent quality goes up, then the maybe clear and convincing would be warranted, but it is not warranted now. So

we get into interactions. I think people would say strong medicine and the question is, do we need to do that or maybe we should work on other pieces first?

GRISWOLD: I would like to comment on this because no one has come forward with the comments that AIPLA—how they analyzed this. And it actually is kind of relevant to this whole discussion on how we looked at this issue. I think we ought to get out in front on what we really have today, because no one today stated this the way our people analyzed this.

SHAPIRO: I think there is a fair bit of consensus among the associations about this, not the details, but not being thrilled with this proposal, so if you could say why and where you guys are at

GRISWOLD: What we didn't hear today, unless I was missing it, are the people that looked in this for the AIPLA—which does not support this proposal, by the way—[is that] you have to separate the presumption of validity from burden of proof. Now, we are looking at the burden of proof, and that is what this recommendation is about. Our people say that, today, the standard for factual predicate for invalidity is clear and convincing. The standard for the persuasive force of that factual predicate is preponderance. . . . And our people would say that this would convert, they believe, the standard for the factual predicate to preponderance, and move it from clear and convincing. . . .

SACOFF: Basically that is right, I mean, to the extent that looking into our membership is a window into the IP lawyer community, I think you will find that this is probably one of the more controversial recommendations in the report.

SHAPIRO: That means you are against it, right?

SACOFF: The developing view in the ABA IP Section, I think, is to oppose this. I think the general thinking is that lowering the burden of proof for the facts, as Gary [Griswold] correctly points out, lowers the confidence factor and raises the unpredictability factor for all patents and not just patents that we might call questionable or dubious. And the feeling is in our section that, when correctly applied, the current standard is appropriate and conducive to the right level of certainty.

SHAPIRO: My sense, talking with other people, is that other organizations that are similarly placed. Isn't that right, Herb [Wamsley], for IPO?

WAMSLEY: That is right, Carl [Shapiro]. We are against it, too. Basically we are into fixing other things in the system and trying to fix them fast, and we are into fixing the Patent and Trademark Office,

willfulness, post-grant. And those are things that can be done, but this one we are against.

SHAPIRO: Jeff [Kushan], very quickly, from BIO.

KUSHAN: BIO has a lot of concern about this one, so we are opposed. I have to slip in a couple of rebuttals to Mark [Lemley]'s characterization earlier. First, one of the big problems we face in the Patent Office is they chop our patent applications up into a hundred separate applications. So if you take his math, that is 1,700 hours per invention that they are getting for each one of our inventions of processing time, not seventeen. And that is an important factor to keep in mind. The second thing is there are about three million patents, four million patents, enforced today, and about 5,000 of them are in litigation right now, and we have a lot of licensing behavior which is predicated on the presumption of validity. . . .

SHAPIRO: I could see why the patent holder is in a stronger position because of the presumption, but what do you mean "predicated on"?

KUSHAN: In our sector, quality is not a big problem. We certainly have issues of validity of patents, but it is not perceived to be as bad as other sectors. And I will say this because we have a better prior art foundation, all of our art is in the literature, our issues are fairly mature, and, again, the Patent Office is chopping up our patent applications into microscopic pieces, and so a patent examiner gets twenty-five hours to take a little tiny piece in our world, he is going to get a pretty good answer. And in that setting we feel generally comfortable that many of the patents that get out are going to be valid, and I think that concerns that other sectors have may not be as pervasive as they are on the biotech sector.

SHAPIRO: So the presumption you feel maybe more warranted in your area. . . .

. . . .

MYRICK: This is one position that USCIB does have. I do not necessarily agree with it fully myself, but I want to state it on the record that USCIB is against Recommendation 2. However, I do believe personally now that, to the extent that clear and convincing applies to something that is unexamined, it is unjustifiable, so I think there is a balance here that can be drawn, but for the record, I need to say that USCIB is against this provision.

SHAPIRO: I think we got a good sense of there is sort of the lack of support, at least in those quarters.

Number 3, having to do with obviousness: "Tighten certain legal standards used to evaluate whether a patent is obvious." This touches on the

commercial success test and the suggestion test, both raised here. Maybe Bob [Barr], you wanted to talk about this one.

BARR: . . . Going back, the presumption of validity is in the statute, a burden of proof is not, so [the burden of proof is] a judicial creation that I do think is unjustified. The reason I went back to that is because people have said, "Well, let's fix the other stuff first." This is pretty easy to fix, the burden of proof, if we decide to fix it. The issues around obviousness are much harder to fix, I think. It is harder, and we had a really good panel this morning on it. I learned some things and some new ideas, but I do think the standard itself as written is correct. I think as applied by the court and the Patent Office as told to apply it by the courts, because I do not blame the Patent Office, I know they try to reject some things that they think are obvious, and then the court reverses them, so I will try to only make one enemy with these comments. But I think it is a subjective standard, and the attempt to apply objective tests to it have led to a lowering of the standard. The basic cause of the problem that we face of people of ordinary skill in the art—don't let my engineers know I called them that—by people in the art sort of stumbling into potential infringements of patents that should not have issued, because it should not have worked that way.

SHAPIRO: Let's again hear from the association representatives about this obviousness proposal, maybe Gary [Griswold], want to do this again?

GRISWOLD: Our view on that one was that we put this in a support category because, and the way we looked at it, it really was not advocating a change in existing law. If is not to change existing law, then we are okay with it. But if it is a change in existing law, put it in the case law.

SHAPIRO: Wait, it says tighten certain legal standards. Are you in favor of tightening the standards? Or do you just want to leave them where they are?

GRISWOLD: I want them to be applied the way I think most of us think the existing law is, and that is what our view was. You will see it in the paper. That is the way of art.

SHAPIRO: Okay, Bob [Sacoff]?

SACOFF: We do not favor changing existing law.

SHAPIRO: Or tightening standards?

SACOFF: We think the standards are correct and, if applied correctly, that is the way it ought to be.

SHAPIRO: Herb [Wamsley], do you want to talk some for IPO on this?

WAMSLEY: We do not favor changing what we have perceived to be the case law currently. Let's say on that suggestion to combine issues, it

appeared to some of us that, just about the time the Federal Trade Commission started its hearings a couple years ago, there were two or three cases that came out of the Federal Circuit that might have been aberrations, and those cases appeared to say that you had to have an explicit teaching of a motivation to combine in the references. But I think even the final report of the FTC has a footnote or a clause in it acknowledging that some of the cases that came a little later seem to be swinging back. And I think if you look at the group of the cases decided from the Federal Circuit over the last two, three or four years, or at least that is what some of our people think, is that they were really consistent with what the FTC Report is recommending. So we do not see a need to change anything.

SHAPIRO: I think we will leave that wonderful clarity on that question and move on. I want to kind of lump together to some degree the fourth and fifth proposals. The fourth one says “Provide adequate funding for the PTO.” Now I found very few people who favor inadequate funding for the PTO, and the National Academy of Science certainly is on board here, too, with supporting. So the question, I think it really is how much money? What does adequate mean? Should we think of that in terms of fee diversion or what? But I think the bigger set of issues are, are we going to link resources to performance or some sort of reform or pressure? Is there a quid pro quo? Because people won’t say, well, it is fine to give them more money because they are overworked and these workload statistics are pretty clear, but if they are just going to issue you more questionable patents, I do not want to give them more money.

So I just want to wrap the funding issue together with Proposal 5, [which] talks about modifying certain PTO rules and implementing positions of the PTO’s *21st Century Strategic Plan*. I want to kind of frame that together. Just a quote from the *21st Century Strategic Plan*, it says: “Today the USPTO is under siege. Patent application filings have increased dramatically throughout the world. There are an estimated 7 million pending applications in the world’s examination pipeline, and the annual workload growth in the previous decade was in the range of 20-30 percent. Technology is becoming increasingly complex, and demands from customers”—I think that is patent applicants—“for higher quality products and services have escalated.” And they talk about this plan will make them agile and productive. I fear that productive might mean more patents, but I am not sure about that. They do say that the U.S. industry and the public will benefit from stronger, more enforceable intellectual property rights. So there is a little bit of flavor. And there is a whole set of proposal questions. Many people here know better than I do what they propose to do and would like to do with more resources. And I think you

have heard about this notion that there is a culture maybe that they are trying to issue patents, the incentive structure there. So I guess I want to push everybody a little bit into not just the money, but whether, in addition to implementing their plans, kind of how we can really ensure in that process that patent quality goes up. Ultimately, we are here talking largely at this stage is patent quality. There are a series of sub-proposals here, I won't read them, but I will let people speak to them as they will. I would like to start with Herb [Wamsley]. I know you have been close to this process, certainly the funding side of it. . . .

WAMSLEY: Well, this is one of our favorites at our association. We do lobbying and this is our #1 lobbying issue right now. I think this is one where something can be done to change the patent system this year. There is a bill that is already past the House and it is in the Senate, H.R. 1561, and that is a bill that brings about \$200 million additional into the PTO, it has a provision to stop Congress from diverting that money to unrelated government programs. And the people that are working on this, Carl [Shapiro], in answer to your point, consider that their support for this bill is contingent on the Patent and Trademark Office improving quality in the several ways that the PTO has outlined in our *21st Century Strategic Plan*. That plan is very detailed, it has some things mentioned here like the second pair of eyes, but they also are calling for money for more recruiting of talented examiners, for better training of examiners, for recertification of the competence of examiners, and a number of other things. And we think the appropriators and the Judiciary Committees in Congress are looking at this as a commitment by the Patent and Trademark Office to do these things if the bill passes. I do not think that giving this money means more patents, although it does mean working off this terrible backlog in the electronics areas, but it means more quality, too.

SHAPIRO: Gary [Griswold]? I know you are close, as well, to this process.

GRISWOLD: I have personally spent a lot of time on this legislation and also on the *21st Century Strategic Plan*. Definitely, we would not support this extra funding if it wasn't because we thought the *21st Century Plan* would turn into something. And we will be watching every step of the way. So that is the way we look at it.

We support an end of diversion. We will not accept increasing our fees 15-25 percent, which is substantial for everybody, without having an end to diversion. That money has to go to the PTO to fix the PTO, and that fix is in there. Looking at Recommendation 5, we supported the second pair of eyes and the forging the balance between the public interest and the applicant's interest. We always looked at it that way, but I think there was a

period where the PTO got a little off on a tangent of talking about customers. The public is a big customer at PTO.

SHAPIRO: My polling of the panel is that everybody is really there in terms of more resources for the PTO and it is a question about how to make sure they are used well.

MYRICK: One thing that is not in the Strategic Plan, the *21st Century Strategic Plan*, at least explicitly, and I think it is implicitly, in fact, avoided. As Mark [Lemley] well described today, and I think as was mentioned earlier by Jeff [Kusham], in most of the org units, they have seventeen hours to do the entire job as examiners. In the bio art units, I think they get twenty-five. That is an awfully little amount of time to be able to do the job they have to do. The *21st Century Strategic Plan* does not address the fact that examiners need more time. And I would personally like to see, and this is a personal opinion, some reallocation of some of those resources to give examiners more time to do the job because I am not sure how you get more quality if you are trying to jam more stuff through the same mental pipes in the same amount of time.

SHAPIRO: I would just point out that, of course, if you do this post-grant review procedure, that is going to take a bunch of resources, too, so it puts a little more pressure on it.

SACOFF: I just wanted to add a quick note on the anti-diversion. Everybody lines up on that, but this is the one thing we actually do have ABA policy on. Calling for an end to the diversion of the PTO user generated fees not only is a policy of the ABA IPL Section, it actually has been escalated to a policy of the American Bar Association. It was actually escalated to one of the eleven or twelve legislative priorities of the American Bar Association, along with death penalty issues and everything else. That is how important this is viewed in the ABA as a matter of jobs in the economy.

.....

KUSHAN: We do have a slightly different perspective in BIO than in some of the other trade associations on some of the minutiae of this question. As I mentioned before, in the biotech area, we are being subjected to a process which yields way too many patent applications sitting inside the Patent Office, and that has created an overhead and a backlog which is essentially artificial. So there needs to be a more coherent look at how the Patent Office has structured its examination policies to get a better work product out. There are two elements of this, one, which we have great passion about, is this issue of dividing of the applications unnecessarily. That is very inefficient to take and essentially segment over time and

among different examiners a single invention for examination. The second thing which has kind of dropped off the radar screen, which we think is unfortunate, is the idea of deferred examination, or non-mandatory examination of every single patent application that comes in. There is a huge wave of patent applications that lands at the Patent Office every year, and very few of them two years out, or one year out, have the same passion of commercial value for the applicant.

SHAPIRO: So are you willing to pay more to have yours sped up?

KUSHAN: Well, that is one model that many countries follow. And the question that we are struggling with, and obviously there is a balance of letting these things languish as land mines in the Patent Office, which we very much do not want to have, but at the same time, if there were an obligation on a patent applicant to pay to trigger the examination within a certain period of time, by default, a certain percentage of the work the PTO has to do would drop off, drop off their workload. And so that kind of thinking needs to be done and it has not yet been done by the FTC.

SHAPIRO: Just to frame the whole pendency question, in the *21st Century Strategic Plan*, the PTO says they hope to achieve twenty-seven months overall patent pendency as a goal by 2008. I was not impressed particularly, but I guess it is a lot of work, so that is the sort of thing we are talking about anyhow. So it is not about to go away. Kulpreet [Rana], you had a quick comment here?

RANA: Going back to some of the comments that were said yesterday, as well, I think a lot of people here are in favor of the increased funding, and Carl [Shapiro], to your question about whether it should be linked to some requirements that the PTO actually improve its process, I would hope part of what we would be able to do is to actually get the PTO to buy into some of the changes that we all think need to be made. And rather than trying to motivate them with specific requirements, if we had buy-in, I would think that would be a better process, or in combination.

SHAPIRO: I will glide over number 6 and go to number 7. Number 7 says, "To enact legislation to require publication of all patent applications 18 months after filing." To remind you all that the 1999 legislation end[ed] up causing publication of apparently about 90 percent of the patent applications, according to the FTC's Report. This would then kind of do the extra ten percent.

Rather than go around the table, I will represent to you that everybody here is in favor of this. There is a range between "in favor" and "strongly in favor." Of course, part of this is to prevent submarine tactics and hold-up. It helps promote the disclosure process.

Ron [Myrick], I think you had an interesting point about how we can deal with the concern that somebody might file a patent, the application would be disclosed, then the patent would get rejected and they would say, "Oh, this is really not fair. I had to disclose all that stuff and I didn't get anything in return."

MYRICK: There is a quid pro quo here. People are giving disclosure of their vital information which they otherwise could keep as a trade secret for some period of time, an exchange for a patent. However, with the current pendency, or the target pendency at twenty-seven months, 2008, they may not even know on the date of eighteen months that they have to have their application published, whether or not they are going to get any patent at all. And I think it is incumbent upon the system to not put the applicants in the bind of having to bet on the outcome. They do not know whether they are going to get an examination that is going to give them a patent when they have to let that disclosure go, so they may have to let it go in the dark, and that is not fair. I think what we should be targeting is the First Office Action, telling [applicants] whether or not they have got anything at all in prospect, to be provided to them sufficiently in advance of the eighteen month publication date so that they can decide whether or not they want that publication to go forward, or would like to withdraw the case. Now, that is only fair. And because they are giving up significant rights by that publication and they do not know anything at this time, at least in some arts, particularly in the longer pendency arts such as the computer arts and the information arts. So it is I think a challenge to the system to improve the system at least that much, in many of the arts. By the way, I have to say, having been with a rather large company that Todd [Dickinson] mentioned recently, that we did not have a lot of this problem in many of the businesses we ran. Of course, we ran a lot of businesses, but I think it is a problem that is endemic in some of the information technology businesses.

....

BARR: Although I agree it is a problem, I always thought it was a great feature when I was a prosecutor that we could just tell the client they could decide at the end whether to give up their trade secrets. But, Ron [Myrick], if it is something valuable, then [aren't] the chances of getting a patent are pretty high? So if your assumption is they are giving up something valuable, why wouldn't they get a patent?

MYRICK: It depends upon whether or not they know how valuable it is going to be at the time they have to make that decision.

SIMON: If I may? I take a very different view than Ron [Myrick] because, in my view, the function of the patent system is to get technology

out to society. And people are taking up a public resource, which is I believe a very valuable public resource, and if you are saying, “Well, you can start playing and then decide based on where you think it is going,” I think you are really undermining one of the features of the Patent Office, and this is a real problem because a lot of technology changes very fast, and if you don’t get the stuff out fast, you are going to have a real problem.

SHAPIRO: I view that as sort of a nuance, possible angle, and the one area where somebody might object to this But overall, extremely strong support for that and, again, many patents have been subject to this already so we have evidence that it does not appear to be causing problems. So this is kind of clean it up and get it done for 100 percent.

Proposal 8 has to do with prior use rights: “To enact legislation to create intervening or prior use rights to protect parties from infringement allegations that rely on certain patent claims first introduced in a continuing or other similar application.” There has been some discussion about this. I think a fair bit of concern about continuation practice, and how it can ensnare companies and be part of hold-up problems. My own research is on prior use rights, so I am particularly interested in this area. It seems like there is really almost unanimous support for this, and I would like to have a few of the folks just explain where they are at, who have crafted proposals.

GRISWOLD: I have been a prior use buff since the early ’90s when the Senate first passed a bill that was a broad prior user right, which did not pass the House in time. But, the AIPLA view on this is that we don’t believe there should be a prior use right that attaches to something—a use that begins after the effective filing date. We believe that the prior user right statute today that has some limitations on subject matter, has a requirement that there be a one-year reduction in practice one year prior to the filing date, and does not include substantial preparation. That the statute should be changed to fix those things. But we don’t support moving the date downstream so that would occur during the prosecution. You get into all sorts of unintended consequences where we are not even sure of, including more derivation questions, and so we don’t support that. We think that the publication of patent applications helps us. All applications will help us on the issue of some patent claims showing up later that will be a problem, not perfectly, but that is our direction and belief.

SHAPIRO: Bob [Sacoff], want to talk to the ABA?

SACOFF: I think we are pretty consistent with that. Just in the interest of brevity, let me read you the pending resolution that we have got subject to adoption. “It is resolved that the Section supports in principle the com-

mercial use, including substantial preparations for commercial use should be recognized as a personal defense to patent infringement if undertaken in good faith by a person who has reduced the patented invention of practice prior to the effective filing date of the patent. Specifically, we support an amendment to the American Inventors Protection Act in '99 providing for such rights to remove restrictions on the enjoyment of such rights inconsistent with this principle." And those are some of the limitations that Gary [Griswold] was referring to.

....

[Speaker unknown]: Tentatively, we are in agreement with the other associations. And another point is that the type of prior user right that Gary Griswold is talking about, which is somewhat different from what is in the FTC Report is what you have in several countries abroad now and that has worked well and we would like to see the more limited prior user right that was in the '99 Act expanded that way.

SHAPIRO: So, I think we have a lot of affirmation here for what the FTC is proposing.

BARR: What are you saying? You are saying that the industry representatives support it, but the organizational ones don't. Is that what you are saying?

SHAPIRO: No.

BARR: What you said is obviously important. I just heard all the industry organizations opposed the FTC proposal. Did I get that wrong?

SHAPIRO: I think that they are all supporting it.

GRISWOLD: What we support is expanding the present prior user right, but the present prior user right has its effective date, the effective filing date of the patent application. What the FTC's proposal was to also provide a prior user right that could occur by activity prior to broadening claims during the pendency of a patent application. That part, we do not support because we are concerned with the unintended consequences of derivation issues. We do not even know what would happen there. It gets into a whole bunch of questions of why a person's company prosecuted, or an individual prosecuted a case the way they did, and so we do not support that piece of it. So we support expanding the present prior user right, but not changing the date.

SHAPIRO: So it wouldn't just apply to business methods

GRISWOLD: It would apply to everything.

SHAPIRO: And you don't need to do it one year before the application

....

GRISWOLD: Right.

SHAPIRO: Any time before. You would support that, but not so much in this continuation.

GRISWOLD: If the claim was not there and then you had a broadened claim. I even figure where they have a broadened claim or not, it is a whole continuous snake pit.

SHAPIRO: I thank you for helping. I do not think I did make it clear, hopefully we have got it clear now.

BARR: I would like to support the FTC proposal. I wanted to highlight the difference between the industry representatives and the organizations.

SHAPIRO: Any other industry folks want to say, “Yeah, I really support the FTC” or not?

KUSHAN: I will mention that I am not really, either in this capacity, because BIO is a trade association made up of companies and not necessarily the lawyer associations. This issue is complicated and I don’t know that it can get unqualified support in any reasonable sense, but what I think it is important to pull out the difference that has been pulled out, which is this is talking about vesting a right to any use of an invention after the filing date of a patent, and certainly there are instances where the continuing practice has been abused, but we have got a lot of applications pending now which have been chopped up again by the Patent Office.

....

MR. KUSHAN: Sorry to keep going back to that, but, you know, it bleeds over into a lot of different topics, and so I think it is much more complicated than the FTC gave it credit.

SHAPIRO: Let us move on to [Recommendation] 9, the willfulness: “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.” There is a widespread view that the current willfulness rule is not working well, it is disrupting the disclosure, there are people who don’t want to even read patents, and it gets involved with this whole issue of when you waive attorney-client privilege. And Mark Lemley has written a great article on this, like everything else. So there is a lot of support here. Of course, we get into the particulars. But I did find, in addition to the associations which want to see some change here, we do have the *Knorr-Bramse* case, so a lot of people are saying, “Well, let’s wait and see exactly how that plays out and then we’ll see what else we need,” which seems to me is hard to argue with since it should happen this year. We heard a little bit from some companies. I was impressed with the strength with which a number of company representatives felt like this willfulness

thing is a real problem that can be fixed and they want it to be fixed. I don't know if you guys want to kind of weigh in on that, but I heard that a lot and I think that should come through today, not just from me, but from you guys.

MONAHAN: I think it is probably because this is one of the biggest distortions of the system. This is one of the greatest imbalances. All of those extra ten percent of applications probably doesn't do me much good because I'm afraid to look at them anyway. I have been threatened with letters with patent applications, not just patents, so I get to double my fun. I think that we support some standard that gives us some certainty. I want to know that something is required before I am on notice. I want to be able to act reasonably, I want to be able to act responsibly within my industry to try to do the right thing. Right now, there are a million different facts which are brought to bear and parties attempting to demonstrate willfulness. Oddly enough, notice is usually not one of them, at least in my experience. It is usually something which, again in my experience, was intentionally deceptively orchestrated by a plaintiff's lawyer or by a company. I am not asking to avoid responsibility. If you think I am infringing something, just let me know. But when you get these squirrely letters, or you get invitations to license which later get conveyed to a jury as a "you must have known, you must be willful," that is a problem. And, of course, the result is that when you do your settlement analysis, even as tough as we are in fighting these cases, you have to factor in that additional factor of, "God, what if the worst thing happens and we get treble damages?" And, you know, I have been lucky so far not to see treble damages, but it is a factor which, like punitive damages in civil cases, I think is out of control now, particularly in places like Marshall, Texas, which is why a lot of people are settling cases that are based upon patents which probably should not have ever gotten out of the Patent Office.

SHAPIRO: Kulpreet [Rana], how does this look from Google's perspective? Is it similar?

RANA: I think we face some of the same difficulties that Jay [Monohan] was referring to. We receive letters kind of regularly, increasingly as we have become more visible. We are a bigger target. I think we are definitely aligned with the FTC's proposal in the sense that if you deliberately copy with knowledge that something is patented that, you know, it makes sense that that would give rise to willful infringement. I would like to think a little bit more about the Notice Letter provision of the FTC's recommendation, just because I do kind of wonder what effect that will have on people's behavior and whether that will give rise to [more letters]. I already get plenty of notice letters, I do not particularly

want to get a ton more that I am going to have to spend a lot of time to review. And I think it would be interesting to maybe think about some kind of a consequence for people who issue notice letters, for example. And maybe that ties into things like post-grant review that we have been discussing earlier, where maybe if you issue a notice letter that creates sufficient reasonable apprehension that the person receiving it could initiate some kind of a review, and maybe the cost associated with that is enough to regulate the conduct of the people who are, you know, sending those out. So I think it is an interesting thought. There are some things to kind of think through a little bit more there.

SHAPIRO: Do you want to say something, Bart [Eppenauer]?

MR. EPPENAUER: As I said before, we strongly support this recommendation. In response to your comment, I think that if you have this burden placed on the letter writing, that will reduce the letter writing because in our experience when you challenge somebody to send you sort of a soft letter, to prove it up, it takes a long time to get that information from them, and yet you are still in a willfulness situation. So I think it is really going to help. We are strongly in favor of it and we are strongly in favor of removing adverse inference and trying to avoid the whole waiver of attorney-client privilege, which is a real problem in litigation.

MONAHAN: Let me just add that. Right now the letter writers have their cake and eat it too because they can send you a non-notice letter which costs them almost nothing, and then preserve the ability to make an argument later. I am intrigued by there being a consequence because if I had a dollar for every letter that either we never heard from again or never responded when we wrote to them, we would be rich. So I think this is an important area, and I am concerned about inviting more. But I really think if you put a consequence, you can put a standard on these things, that the incentive to write them would be reduced, and the people who wrote the letters would really believe that they have a claim. And that is what we ought to be dealing with.

.....

BARR: First of all, when the letter writers go away, that is reward in itself, so I am okay with that one. I support the recommendation strongly and I just don't think anyone has mentioned what I think is the most important basis for it is that we can again allow engineers to read patents because, at least to me there is enough ambiguity in the case law that I have to discourage engineers from reading patents and in their prior art searches because that might be enough for willful infringement. But having said that, I will attempt to improve on what Mark said this time because he referred to his article, and I strongly recommend that you read the

article on willfulness—because the recommendation there, after [Lemley] discusses all the problems, he solves the problems by proposing that willfulness can only occur at the time you develop the product. If you copy a product or a patent at the time you develop the product, then you could be liable for willful infringement, but just because you are down the road in what Professor Shapiro calls a hold-up situation, where it is very difficult to modify your product, now you get a notice and you get an opinion, but can you back out? That is a tough problem, and the triple damages penalty for not getting an opinion or not producing it in court or for not having one that satisfies the requirements is a little drastic in the hold-up situation.

....

SHAPIRO: I want to close this part on I think that happy consensus that industry, I think, really wants change here, they feel this is my sense, and FTC has identified some specific ways to do that. Of course, there will be some more discussion about how to implement it. But I hope this will happen and it seems to me we have taken a step in that direction.

VI. CONCLUDING REMARKS

Mozelle Thompson, Commissioner, Federal Trade Commission

THOMPSON: I am very impressed that we are here at the end of a Friday afternoon and there are actually more people here than we started out with this morning. And that is very impressive because I began this morning by noting that today's event had the potential to be a watershed moment in the future of innovation in the U.S. Now, some might criticize that statement as a bit of puffery, but based on the excellent discussion that I have heard today, I am convinced that is true. So at the outset, congratulations, give yourselves a hand.

Now comes the hard part. How do we take our gaggle of bright ideas and keen insights about patent law and process and turn them into something more meaningful about innovation in our economy? Or how do we capitalize on this opportunity to make the patent system more accommodating to innovation in the world that we see today, especially in high technology and biotechnology? And here I might have a few suggestions.

First, I would encourage the people in this room to create an organized and continuing voice of technology and academics to take advantage of the opportunities to support innovation through improvement of our Patent System. I am always struck sitting in that strange place called Washington, D.C., that when you are considering some questions like these questions I am reminded of the movie *Ghostbusters*—"Who you gonna call?" And all

of these people have interesting views, and in looking at our report, it is important to recognize it took almost two years to locate all of those resources, and most policy makers are not in that position. So creating an organized and continuing voice is very important.

Second, I think it is also helpful to create an ongoing resource for policymakers so that we can understand how intellectual property is used in information technology and biotech. In the context of doing this report and being here, and listening to the many people, some of which are here today, I thought it was very enlightening to hear not only viewpoints, but positions and practices, anecdotes, and data. Sometimes that information doesn't filter very well back East. Holding yourself out as a resource is very important.

Third, I would implore you to continue the momentum generated here by developing ongoing mechanisms to discuss among yourselves the specific issues raised here today, and identify areas of consensus.

Fourth, and maybe this is something that is a bit of a challenge to all of us, is talk to the public about your stake in innovation and in intellectual property, and why it is important to them. And be able to talk about the markets that you deal in and how fast they change. In other words, tell people why this issue is important.

Now, I am happy to say that I can make an announcement here, and I don't want people to say that this is a light announcement because I think it is significant, that a core group of leading technology companies are willing to take the first step today by working together, and it may start by a public announcement, that they agree that there is an opportunity to make the patent system more responsive to technology and innovation, and that they agree to meet and have a continuing dialogue among themselves, academics, and policy makers about the proposals discussed here today. Now those companies include Cisco, Intel, eBay, Semantec, Chiron, Microsoft, and Genentech. So with that announcement, I think you are off to a very good start. And I thank you all for getting us to this point.

Now, although I may live to regret it, I look forward to sharing this ongoing relationship with you all as you refine your views and we consider how innovation can thrive in America. So, congratulations, and thank you all for being here.