

**PRESUMED OBVIOUS:
HOW *KSR* REDEFINES THE
OBVIOUSNESS INQUIRY
TO HELP IMPROVE THE PUBLIC
RECORD OF A PATENT**

MARIAN UNDERWEISER*

* Marian Underweiser, Counsel, Intellectual Property Law, International Business Machines Corporation, Armonk, New York. The views expressed in this article are her own and do not necessarily reflect the views of IBM or its Law Department. The author was a co-author of the Brief of Amicus Curiae International Business Machines Corp. in Support of Neither Party, *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) (No. 04-1350). Many thanks to Marc Ehrlich, Manny Schecter, and Ronald Mann for their helpful comments on earlier drafts.

TABLE OF CONTENTS

I.	INTRODUCTION.....	249
II.	THE FEDERAL CIRCUIT’S “TEACHING, SUGGESTION, MOTIVATION” (“TSM”) TEST AND HINDERED DEVELOPMENT OF GUIDANCE FOR DETERMINING OBVIOUSNESS	252
A.	<i>The Nonobviousness Requirement Before KSR: The “TSM” Test.....</i>	253
B.	<i>The TSM Test Set the Bar Too Low For Patentability</i>	257
C.	<i>The TSM Test Rendered Obviousness Analysis Opaque.....</i>	265
III.	THE KSR DECISION HAS LED TO THE DEVELOPMENT OF A REBUTTABLE PRESUMPTION OF COMBINABILITY	268
A.	<i>The Supreme Court Establishes a More Flexible Approach in KSR.....</i>	268
B.	<i>The PTO Is Applying a Rebuttable Presumption of Combinability</i>	272
C.	<i>In Many Cases the Federal Circuit Is Also Applying a Rebuttable Presumption of Combinability</i>	278
1.	<i>The Special Case of Certain Inventions in the Chemical Arts</i>	286
2.	<i>The Framework of the Rebuttable Presumption of Combinability</i>	289
IV.	A REBUTTABLE PRESUMPTION OF COMBINABILITY SUPPORTS DEVELOPMENT OF A PUBLIC RECORD	293
A.	<i>Establishing a Public Record.....</i>	293
B.	<i>The Presumption Helps Achieve the Right Standard</i>	296
C.	<i>Applying the Framework Established by the Presumption</i>	296
D.	<i>The Ultimate Conclusion of Obviousness Is an Issue of Law....</i>	298
E.	<i>Inconsistencies in the Chemical Arts</i>	302
V.	CONCLUSION	303

I. INTRODUCTION

In recent years, there has been a widespread push to reform the nation's patent system. This push comes from all constituents, including manufacturers,¹ consumers,² government agencies,³ patent holders,⁴ legal organizations,⁵ academia,⁶ President Obama,⁷ and even the United States Patent and Trademark Of-

-
- ¹ Organizations representing commercial constituents, including product and service providers across diverse industries, have recently confirmed their support for broad-based patent reform legislation by writing letters in support of passage of the Patent Reform Act of 2009, S. 515, 111th Cong. (2009), approved on April 2, 2009 by the Senate Judiciary Committee. See Letter from Steven W. Miller, President, Intellectual Prop. Owner's Ass'n, to Hon. Harry Reid, Senate Majority Leader, et al. (June 9, 2009) (<http://www.ipo.org/AM/Template.cfm?Section=Home&CONTENTID=22728&TEMPLATE=/CM/ContentDisplay.cfm>); Letter from Terry Rea, President, Am. Intellectual Prop. Law Ass'n, to Hon. Harry Reid, Senate Majority Leader, & Hon. Mitch McConnell, Senate Minority Leader (Apr. 28, 2009) (http://www.aipla.org/Content/ContentGroups/Legislative_Action/111th_Congress1/Testimony7/AIPLA-Letter-on-S515-Floor-Consideration-042809.pdf). In the context of judicial reform, intense amicus activity in cases such as *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) and *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) evidences strong interest in either preserving or altering the patent laws as applied by the courts.
- ² See, e.g., FEDERAL TRADE COMMISSION, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 18 (2003), <http://www.ftc.gov/os/2003/10/innovationrpt.pdf> [hereinafter FTC REPORT] ("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.").
- ³ *Id.*; see also NATIONAL RESEARCH COUNCIL OF NATIONAL ACADEMIES, A PATENT SYSTEM FOR THE 21ST CENTURY 2 (Stephen A. Merrill et al. eds., 2004), <http://www.nap.edu/html/patentsystem/0309089107.pdf> [hereinafter NRC STUDY] ("But even without additional study we can identify areas of strain, inefficiency, excessive cost on the one hand and inadequate resources on the other hand that need to be addressed now.").
- ⁴ See, e.g., *supra* note 1.
- ⁵ See Letter from Terry Rea, *supra* note 1; AMERICAN BAR ASSOCIATION SECTION OF INTELLECTUAL PROPERTY LAW, A SECTION WHITE PAPER: AGENDA FOR 21ST CENTURY PATENT REFORM 1 (2009), <http://www.abanet.org/intelprop/home/PatentReformWPasofMarch09.pdf>.
- ⁶ See *Full Committee Hearing on the Importance of Patent Reform on Small Business: Hearing Before the H. Comm. on Small Business*, 110th Cong. 17 (2007) (statement of Professor John R. Thomas, Georgetown University Law Center); see also Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1523 (2001) (questioning the patent

fice (PTO).⁸ While these constituents certainly do not all share the same agenda for reform, and with others opposing reform of any kind,⁹ the economic significance of patents and the problems manifest in the system have nevertheless resulted in legislative and judicial actions to broadly overhaul the patent system. Legislative reform seeks the most extensive rewriting of patent law since the Patent Act of 1952,¹⁰ while the Supreme Court has taken a number of patent cases on appeal,¹¹ reversing long-standing rules established by the Court of Appeals for the Federal Circuit, the nation's single appellate patent court.¹²

The cases decided by the Supreme Court follow a general trend to soften rules developed by the Federal Circuit over its quarter-century tenure¹³ that are widely viewed as making it unreasonably difficult for patent examiners at the PTO to reject patent applications in view of prior art, and for accused in-

statute's presumption of validity and suggesting easing the requirements for obtaining attorney's fees in patent cases).

⁷ Public Policy Connections, *White House Agenda Released by Obama Administration*, http://slaconnections.typepad.com/public_policy_blog/2009/03/white-house-agenda-released-by-obama-administration.html (Mar. 3, 2009, 11:01 EST):

Reform the Patent System: Ensure that our patent laws protect legitimate rights while not stifling innovation and collaboration. Give the Patent and Trademark Office (PTO) the resources to improve patent quality and open up the patent process to citizen review to help foster an environment that encourages innovation. Reduce uncertainty and wasteful litigation that is currently a significant drag on innovation.

⁸ UNITED STATES PATENT AND TRADEMARK OFFICE, THE 21ST CENTURY STRATEGIC PLAN I (2003), http://www.uspto.gov/web/offices/com/strat21/stratplan_03feb2003.pdf.

⁹ See, e.g., *Patent Reform in the 111th Congress: Legislation and Recent Court Decisions: Hearing Before the S. Comm. on the Judiciary*, 111th Cong. 2 (2009) (prepared testimony of Taraneh Maghame, Vice President, Tessera, Inc.), available at <http://judiciary.senate.gov/pdf/09-03-10Maghametestimony.pdf>.

¹⁰ Patent Act of 1952, ch. 950, § 1, 66 Stat. 798 (codified as amended at 35 U.S.C. §§ 1–376 (2006)).

¹¹ In addition to *KSR* and *eBay*, the Court has, for example, recently rendered opinions in *Quanta Computer, Inc. v. LG Elecs., Inc.*, 128 S. Ct. 2109 (2008) (patent exhaustion) and *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118 (2007) (declaratory judgment jurisdiction in patent cases). Additionally, the Court heard oral arguments on November 9, 2009 for *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc) (patentable subject matter), cert. granted sub nom. *Bilski v. Doll*, 129 S. Ct. 2735 (2009) (No. 08-964) (argued Nov. 9, 2009).

¹² *KSR*, *eBay*, *Quanta*, and *Medimmune* are all reversals. *Quanta*, 128 S. Ct. at 2122; *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 428 (2007); *MedImmune*, 549 U.S. at 137; *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 394 (2006).

¹³ See 28 U.S.C. § 1295 (2006) (setting forth jurisdiction of the Court of Appeals for the Federal Circuit).

fringers to challenge patents and defend against infringement charges in court.¹⁴ For example, in *eBay, Inc. v. MercExchange, L.L.C.*,¹⁵ the Court simply decided that, consistent with the permissive language in the patent statute,¹⁶ injunctions in patent cases should not automatically be granted to prevailing patentees.¹⁷ The Court reversed a long-standing rule of the Federal Circuit that resulted in the grant of a permanent injunction in virtually every case where infringement of a valid patent was found, regardless of the adequacy of monetary damages or the harm to the infringer or the public.¹⁸

The Supreme Court's efforts to strike a balance more sensitive to the rights of accused infringers and the public is nowhere more apparent than in the Court's recent decision in *KSR International Co. v. Teleflex Inc.* ("KSR").¹⁹ The issue in *KSR* is at the heart of patent law: what does it mean for an invention to be "nonobvious," and therefore, represent a sufficient departure or advance from what has come before to warrant patent protection?²⁰

In Part II, this article will explore the law established by the Federal Circuit, characterized by the "teaching, suggestion, motivation" or "TSM" test. The TSM test placed a high burden on patent, or patent application, obviousness challenges by requiring proof of a connection between prior art references before those references could be considered together to establish invalidity. The

¹⁴ See James W. Dabney, *KSR: It Was Not A Ghost*, 24 SANTA CLARA COMPUTER & HIGH TECH. L.J. 131, 144 (2007) ("The first years of the Federal Circuit coincided with a spectacular increase in the percentage of cases in which patent claims withstood invalidity challenges in federal court litigation." (citing WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 338 (2003)); see also FTC REPORT, *supra* note 2, at 20–21; NRC STUDY, *supra* note 3, at 23. As many have recognized, the Federal Circuit, particularly in its early years, arguably reacted to years of jurisprudence that had fostered uncertainty and weakened patent rights to the point of interfering with the fundamental incentives to innovation that patents are meant to provide. See, e.g., F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 700 (2001). Recent circumstances point to an imbalance in the other direction. See Transcript of Oral Argument at 42, *KSR Int'l, Inc. v. Teleflex, Inc.*, 550 U.S. 298 (2007) ("[T]here are many from parts of the patent bar and others who are saying basically that [the Federal Circuit] leaned too far in the direction of never seeing a patent they didn't like and that has unfortunate implications for the economy.").

¹⁵ 547 U.S. 388 (2006).

¹⁶ 35 U.S.C. § 283 (2006) ("The several courts . . . may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent . . .").

¹⁷ *eBay*, 547 U.S. at 394.

¹⁸ *Id.* at 394 ("Just as the District Court erred in its categorical denial of injunctive relief, the Court of Appeals erred in its categorical grant of such relief.").

¹⁹ 550 U.S. 398 (2007).

²⁰ *Id.* at 427.

Federal Circuit Court's rigid application of this test resulted in poor quality patents, sparse or unhelpful records in patent prosecution and patent infringement lawsuits, and thus little guidance on how to determine validity.

In Part III, the *KSR* decision and subsequent decisions of the PTO and the courts applying *KSR* are discussed. These cases suggest that the courts and the PTO are applying a rebuttable "presumption of combinability" as a way to distill the jurisprudence of the Court in *KSR*.

In Part IV, this article discusses reasons supporting application of a presumption, its positive consequences for patent quality, and establishment of an appropriate record at the PTO. The author suggests that a key element of the *KSR* decision is that it refocuses courts' attention on the legal aspect of the obviousness question. This focus should result in more complete and accurate records from court proceedings that analyze patent validity. In the aggregate, these records should in turn form guides that the public and PTO can apply, enhancing predictability and promoting competition.²¹

II. THE FEDERAL CIRCUIT'S "TEACHING, SUGGESTION, MOTIVATION" ("TSM") TEST AND HINDERED DEVELOPMENT OF GUIDANCE FOR DETERMINING OBVIOUSNESS

The Federal Circuit's most significant contribution to obviousness jurisprudence was the "teaching, suggestion, motivation," or "TSM" test, which placed a high burden on patent, or patent application, obviousness challenges by requiring proof of the connection between prior art references before those references could be considered together to establish invalidity. Rigid application of this test by the Federal Circuit resulted in poor quality patents, sparse or unhelpful records in patent prosecution, and a lack of analysis by the courts. This resulted in patentees and the public having little guidance on how to address the obviousness question.

²¹ If the public cannot discern the valid scope of a patent until after all infringement litigation has concluded, investment in innovative products that might potentially fall within the patent's scope is discouraged. See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150 (1989). This article builds on arguments first put forth in IBM's amicus brief to the Supreme Court in *KSR*, of which the author of this article was a co-author: Brief for International Business Machines Corp. as Amicus Curiae Supporting Neither Party, *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) (No. 04-1350), 2006 WL 2430566 [hereinafter IBM Amicus Brief].

A. *The Nonobviousness Requirement Before KSR: The “TSM” Test*

Nonobviousness is one of three statutory requirements that an invention must satisfy to warrant patent protection.²² The invention must also be “useful”²³ and “novel.”²⁴ While the novelty requirement has several aspects, it is most often a question of whether or not the invention has been described in its entirety in a single reference, or was known or used by others, before the date of invention.²⁵ Obviousness is governed by 35 U.S.C. § 103, which states in pertinent part:

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.²⁶

²² 35 U.S.C. §§ 101–103 (2006). There are a number of other requirements for patentability that relate to the manner in which the invention is described and claimed in the patent document. *See* 35 U.S.C. § 112 (2006) (setting forth the enablement, best mode, written description, and definiteness requirements).

²³ *Id.* § 101 (utility requirement).

²⁴ *Id.* § 102 (novelty requirement).

²⁵ *Id.*

²⁶ *Id.* § 103. The 1952 Patent Act codified the common-law doctrine of obviousness. *See* Patent Act of 1952, ch. 950, § 1, 66 Stat. 798 (codified as amended at 35 U.S.C. § 103 (2006)). While acknowledging pressure to interpret that codification as changing the obviousness standard, in its first opportunity to evaluate obviousness after enactment, the Supreme Court made clear that the act did nothing to change the common law doctrine:

Although we conclude here that the inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the requirements of § 103, it bears repeating that we find no change in the general strictness with which the overall test is to be applied.

Graham v. John Deere Co., 383 U.S. 1, 19 (1966). The obviousness requirement under U.S. law originated in *Hotchkiss v. Greenwood*, 52 U.S. 248 (1851), where the Court found that making doorknobs having a metallic shank and spindle out of clay or porcelain was not patentable when clay doorknobs were known and metal doorknobs with the same shank and spindle were also known:

[U]nless more ingenuity and skill in applying the old method of fastening the shank and the knob were required in the application of it to the clay or porcelain knob than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which

While an invention may not be disclosed in its entirety in a single prior art reference, § 103 further requires that the differences between the invention and the prior art as a whole must be sufficient to render the invention a nonobvious advance.²⁷ Under § 103, a variety of different prior art references may be combined such as teachings from published patent applications and the background knowledge of a person having ordinary skill in the art.²⁸ In 1966, the Supreme Court interpreted § 103 for the first time, setting forth the following factual inquiries underlying the nonobviousness determination:

1. The scope and content of the prior art;
2. The level of ordinary skill in the art; and
3. The differences between the claimed invention and the prior art.²⁹

Against the background established by these findings, the obviousness or non-obviousness of the subject matter is determined.³⁰ Secondary considerations, such as long felt need, commercial success, and failure of others,³¹ may supplement the analysis in reaching the ultimate legal determination of whether or not the claimed invention is nonobvious.³²

Most issued patents, including those that are litigated, can be understood as a combination of elements that exist in the prior art.³³ While it may be

constitute essential elements of every invention. In other words, the improvement is the work of the skilful mechanic, not that of the inventor.

Hotchkiss, 52 U.S. at 267.

²⁷ See *Graham*, 383 U.S. at 14–15.

²⁸ See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417–18 (2007).

²⁹ *Graham*, 383 U.S. at 17.

³⁰ *Id.*

³¹ *Id.* at 17–18.

³² *Id.*

³³ Judge Learned Hand made this observation in 1935:

[T]he defendant argues that the supposed invention is no more than a substitution of materials familiar to the art in the same uses; an aggregation of which each part performs what it did before. We may concede as much arguendo, for the same may be said of every invention. All machines are made up of the same elements; rods, pawls, pitmans, journals, toggles, gears, cams, and the like, all acting their parts as they always do and always must. All compositions are made of the same substances, retaining their fixed chemical properties. But the elements are capable of an infinity of permutations, and the selection of that group which proves serviceable to a given need may require a

relatively straightforward to evaluate nonobviousness if certain claimed elements are not present in the prior art, in the more common cases where all elements are present, it is more difficult to establish a rule.³⁴ After all, if one considers the prior art in the aggregate, there are no differences between the prior art and the claimed invention. This kind of “aggregation” argument is of course an oversimplification. While the claimed elements may all be found in the prior art, they may be significantly transformed in the claimed combination, or the claimed combination as a whole may achieve a result far greater than the sum of its parts. Consider Thomas Edison and the light bulb. While Edison is not regarded as the first inventor of the light bulb, his pioneering and patented invention covered the use of carbonized filaments in lieu of shorter-lived filaments made of other materials with already-known oxygen-emptied glass globes.³⁵ The constituent elements were part of the prior art, but the combination was nevertheless a significant advance.

The Federal Circuit has long recognized the challenge presented in evaluating obviousness when an invention can be viewed as a “combination” of elements found in the prior art.³⁶ While Federal Circuit jurisprudence on ob-

high degree of originality. It is that act of selection which is the invention; and it must be beyond the capacity of common-place imagination.

B. G. Corp. v. Walter Kidde & Co., 79 F.2d 20, 21–22 (2d Cir. 1935).

³⁴ In fact one could argue that in finding an invention nonobvious, courts settle on an interpretation of the invention such that it contains an element or elements missing from the prior art. In *United States v. Adams*, 383 U.S. 39 (1966), the most recent instance where the Supreme Court found an invention nonobvious, the Court reasoned:

[T]he fact that the Adams battery is water-activated sets his device apart from the prior art. It is true that Claims 1 and 10 . . . do not mention a water electrolyte, but, as we have noted, a stated object of the invention was to provide a battery rendered serviceable by the mere addition of water.

Id. at 48.

³⁵ Press Release, United States Patent and Trademark Office, Patent Models: Icons of Innovation (Feb. 11, 2002), available at <http://www.uspto.gov/news/pr/2002/02-11.jsp>.

³⁶ The combination of prior art elements is distinguishable from a “combination invention”—the Federal Circuit has made clear that there is no special category of “combination inventions,” and therefore no need for an additional requirement for patentability, such as “synergism” for such inventions. See 2-5 DONALD S. CHISUM, CHISUM ON PATENTS § 5.04[5][c][iii][E] (2009 & Supp. to § 5.04). The same test for obviousness should apply to all inventions, i.e., whether the subject matter “as a whole” is obvious. See *id.* at § 5.04[5][c][iv]. A combination of pre-existing elements would be nonobvious if the combination is nonobvious. See *id.* at § 5.04[5][c][iv]. Any other approach exalts form over substance. See, e.g., discussion *supra* notes 33–34; cf Joseph Scott Miller, *Remixing Obviousness*, 16 TEX. INTELL. PROP. L.J. 237, 251–52 (2008) (arguing for a presumption-based test for obviousness specific to combination inventions). While some of the examples the Court

viousness does not distinguish between different types of inventions,³⁷ the court recognized that the patent document itself could effectively provide a roadmap that would lead a court or jury to assume that combining references was obvious.³⁸ If all the elements of an invention are found in the prior art, this “hindsight bias” might lead to an erroneous determination of obviousness when an invention would not in fact have been obvious to a person of ordinary skill in the art at the time it was made.³⁹ As a result, the Federal Circuit developed the “teaching, suggestion, motivation” (“TSM”) test.⁴⁰ A recent, comprehensive definition of the test can be found in *In re Khan*,⁴¹ a case that was decided after the Court granted certiorari in *KSR*, but before it rendered a decision:

A suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as “the teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. . . . The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.”⁴²

While this description of the test is broad, flexible, and allows for many factors to be considered when combining references, including drawing inferences from the knowledge of those of ordinary skill, in practice the Federal Circuit had applied the test in an increasingly mechanical way.⁴³

provides in *KSR* describe particular types of inventions, the Court nowhere suggests that any inventions should be treated differently from any others as a categorical rule for the purpose of analyzing obviousness. See generally *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007).

³⁷ See *supra* note 36.

³⁸ *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999) (“Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.”).

³⁹ See *id.*

⁴⁰ *Id.* (“Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”).

⁴¹ 441 F.3d 977 (Fed. Cir. 2006).

⁴² *Id.* at 987–88 (quoting *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000)).

⁴³ *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (“The Court of Appeals, finally, drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias. . . . Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.”).

B. The TSM Test Set the Bar Too Low For Patentability

In *KSR*, the Federal Circuit reversed and remanded the district court's grant of summary judgment of obviousness because "specific findings" of a teaching, suggestion or motivation had not been found.⁴⁴ *KSR* was not unusual in this regard. The Federal Circuit had applied this evidentiary requirement so strictly that it was often extremely difficult to prove obviousness without an explicit teaching in the prior art references that directed their combination. For example, in reviewing a decision by the Board of Patent Appeals and Interferences ("Board"), the Federal Circuit explained that "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. Rather, the Board must point to some concrete evidence in the record in support of these findings."⁴⁵ The unreasonably high hurdle imposed by the TSM test was recognized in two U.S. Government agency reports.⁴⁶ A 2004 study by the National Research Council ("NRC Study") recognized that the evidence the Federal Circuit was looking for was unlikely to be found because "creative people generally speaking strive to publish *non-obvious* information. So if it is obvious to those of skill in the art to combine references, it is unlikely that they will publish such information."⁴⁷ A 2003 report by the Federal Trade Commission ("FTC Report") made a similar observation, noting that skilled artisans tend not to publish obvious combinations, so the Federal Circuit's express teaching-suggestion-motivation requirement means that inventions whose elements are all found

⁴⁴ *Teleflex, Inc. v. KSR Int'l Co.*, 119 F. App'x 282, 288–90 (Fed. Cir. 2005), *rev'd*, 550 U.S. 398 (2007).

⁴⁵ *In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001); *see also In re Lee*, 277 F.3d 1338, 1344 (Fed. Cir. 2002) (holding that the Board had omitted from its analysis "a relevant factor required by precedent" that caused it to commit "both legal error and arbitrary agency action" when the Board "rejected the need for 'any specific hint or suggestion in a particular reference' to support the combination of . . . references" and relied instead on the common knowledge of those skilled in the art); *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"); *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1348–49 (Fed. Cir. 2000) (stating "the showing of combinability, in whatever form, must nevertheless be 'clear and particular'" (quoting *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999))).

⁴⁶ FTC REPORT, *supra* note 2, at ch. 4 at 14 (recognizing some apparent liberalization of the Federal Circuit's approach after the Supreme Court agreed to review *KSR*); NRC STUDY, *supra* note 3, at 59, 90 (discussing problems with applying the test for obviousness to business methods).

⁴⁷ NRC STUDY, *supra* note 3, at 90.

among a combination of prior art references are being judged nonobvious “when only a modicum of additional insight [by those skilled in the art] is needed.”⁴⁸

The Federal Circuit’s strict application of the TSM test essentially reduced the test for obviousness to the test for novelty when all the elements of a claimed invention could be found in the prior art, since instructions for putting the pieces together needed to be found in the prior art as well.⁴⁹ The obviousness requirement is, of course, an important additional test for patentability,⁵⁰ so any test that collapses it into novelty upsets the purpose of the nonobviousness requirement which “extends the field of unpatentable material beyond that which is known to the public under § 102, to include that which could readily be deduced from publicly available material by a person of ordinary skill in the pertinent field of endeavor.”⁵¹ The proper balance for obviousness cannot be achieved unless we attribute to “the person having ordinary skill in the art 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.”⁵² The TSM test thus may have prevented examiners and fact-finders from resorting to hindsight bias, but it set the bar too low for patentability, leading to the issuance and enforcement of patents covering trivial advances.⁵³

An arguably more significant problem with the TSM test was uncertainty. A requirement for an express teaching to combine was a difficult criterion for examiners to meet, given the restraints on time and the limited resources at their disposal. An examiner typically has about twenty hours for initial examination of an application, including time for searching the prior art.⁵⁴ In fields

⁴⁸ FTC REPORT, *supra* note 2, at ch. 4 at 14.

⁴⁹ See IBM Amicus Brief, *supra* note 21, at 8; see also Miller, *supra* note 36, at 249 & n.47. In *KSR*, the Federal Circuit used a different but equally narrow application of the TSM test by requiring that the “problem solved” by the prior art references match that stated by the invention at issue. See *infra* Part II.B.

⁵⁰ See, e.g., *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966) (“[P]atentability is dependent upon three explicit conditions: novelty and utility as articulated and defined in § 101 and § 102, and nonobviousness . . . as set out in § 103.”).

⁵¹ *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150 (1989).

⁵² FTC REPORT, *supra* note 2, at ch. 4 at 15.

⁵³ See *id.* at 14–15.

⁵⁴ According to a document on the United States Patent and Trademark Office website, an examiner at mid-level GS-12 has 17.5 hours for a “balanced disposal” for applications in class 14 (bridges), with more time for more complex subject matter and more or less time depending on the experience of the examiner. UNITED STATES PATENT AND TRADEMARK OFFICE, REQUEST FOR QUOTE (RFQ) AND STATEMENT OF OBJECTIVES (SOO): PATENT EXAMINERS PRODUCTION EXPECTANCY GOALS RE-ASSESSMENT AND ADJUSTMENT 6,

where the prior art may be more difficult to find, including emerging fields such as nanotechnology, or existing fields where innovators do not regularly publish their research such as software development, the job of the examiner is that much more difficult.⁵⁵ In following the TSM test, if the examiner fails to find the requisite teaching, suggestion, or motivation in the relevant art, it does not mean the evidence does not exist. Thus, the record before the examiner was often irrelevant and could not help define the valid scope of patent claims, resulting in the issuance of obvious patents.

The seemingly straightforward, even mechanical, TSM test yielded an anomalous result: it was so difficult for examiners to apply effectively that it was unclear what the outcome of a more thorough analysis would be, such as that in an infringement proceeding. Issued patents are, of course, entitled to a presumption of validity,⁵⁶ whether or not the examiner actually found the closest prior art or additional teaching required by the TSM test.⁵⁷ Any member of the public, such as a commercial manufacturer or service provider, was thus unsure about the validity of patents in its field, while at the same time burdened by a high hurdle for proving invalidity even if art or other teachings were found that the PTO never discovered. Such uncertainty interferes with the important “public notice function” of the patent law,⁵⁸ since these patents lack the clarity of property rights that the Supreme Court has deemed “essential to promote progress, because it enables efficient investment in innovation.”⁵⁹ The lack of

http://www.uspto.gov/go/proc/pgs/rfqsoo_v2.doc (last visited Jan. 13, 2010); *see also* *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 68 F. Supp. 2d 508, 525 (D.N.J. 1999) (according to the expert testimony of Harry Manbeck, former United States Commissioner of Patents and Trademarks, and Assistant Secretary of Commerce: “[t]he examiner also only dedicates 15 to 17 hours to each patent and therefore, relies heavily on the information provided by the applicant”).

⁵⁵ *See* FTC REPORT, *supra* note 2, at ch. 3 at 45–46 (“The formal recognition of the patentability of software and Internet-related business methods has spurred increased patenting and has presented challenges in locating the relevant prior art, much of which exists outside of traditional prior art sources.”).

⁵⁶ 35 U.S.C. § 282 (2006).

⁵⁷ *See, e.g., PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1305 (Fed. Cir. 2008) (“[P]rior art . . . never before the PTO does not change the presumption of validity . . .”).

⁵⁸ *See* *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150–51 (1989).

⁵⁹ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730–31 (2002):

A patent holder should know what he owns, and the public should know what he does not . . . [to satisfy] the delicate balance the law attempts to maintain between inventors, who rely on the promise of the law to bring the invention forth, and the public, which should be encouraged to pursue innovations, creations, and new ideas beyond the inventor’s exclusive rights.

clarity regarding the scope of a valid patent under the TSM test was exacerbated by the absence of incentives for applicants to elaborate on patentability in communications with the patent office. If the examiner could not reject a patent claim when appropriate then she could not compel the applicant to clearly delineate the scope of his invention in order to overcome that rejection. Accordingly, any help in evaluating the scope or validity of an issued patent that might be present in the record of patent prosecution—the “prosecution history” or “file wrapper”—was discouraged, since an applicant need not take any action, such as explanatory statements or claim amendments that could limit the scope of his invention, unless compelled to do so by the examiner.⁶⁰

The Federal Circuit applied the TSM test from its inception in 1982 until it was reversed by the Supreme Court in 2007.⁶¹ Despite indications that the test was too difficult for challengers, and therefore examiners, to meet,⁶² the Federal Circuit applied the test in an often rigid fashion.⁶³ Among other rea-

Id. at 731; see also JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 19 (2008) (“This analysis leads us to the conclusion that during the late 1990s, the American patent system failed as a system of property rights for public firms. It did so because it failed to provide clear and efficient notice of the boundaries of the rights granted.”). The authors observe that improved patent notice would reduce the incidence of inadvertent infringement and ensuing litigation, increase buyers’ willingness to pay for technology, and increase the value of patents. BESSEN & MEURER, *supra*, at 21.

⁶⁰ See, e.g., Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (explaining that the analysis of the meaning of a claim term begins with a review of the patent specification and prosecution history). The public record of the patent, including the prosecution history, is relevant for determining many issues in patent law, including obviousness. See Graham v. John Deere Co., 383 U.S. 1, 33 (1966):

It is, of course, well settled that an invention is construed not only in the light of the claims, but also with reference to the file wrapper or prosecution history in the Patent Office. Claims as allowed must be read and interpreted with reference to rejected ones and to the state of the prior art; and claims that have been narrowed in order to obtain the issuance of a patent by distinguishing the prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent.

Graham, 383 U.S. at 33 (internal citations omitted).

⁶¹ See Dabney, *supra* note 14, at 141; Rentrop v. Spectranetics Corp., 550 F.3d 1112, 1117 (Fed. Cir. 2008) (“KSR . . . rejected a ‘formalistic conception of the words teaching, suggestion and motivation’ [T]he Court held that applying the TSM principle as a rigid rule is error.”).

⁶² See *supra* note 14.

⁶³ See discussion *supra* text accompanying notes 43–48.

sons,⁶⁴ one reason for the test's rigid application may be inherent in the difficult nature of the inquiry: obviousness determinations involve a somewhat complex reconstruction of the environment in which an inventor was operating. This is not the actual inventor's specific environment, but a kind of "generic" environment of a person of ordinary skill, who is at the same time considered to be "omniscient" in his field.⁶⁵ The inquiry must be field-dependent,⁶⁶ and so must be repeated in each case.⁶⁷ These requirements are designed to provide some uniformity and objectivity to the obviousness determination; it is not important that this inventor made a certain kind of leap, but that this invention is the kind of nontrivial advance that is sufficient to warrant patent protection.⁶⁸ A subjective approach would have the adverse consequences of protecting the manner in which the invention was made, which is explicitly prohibited by statute.⁶⁹ Especially when rigidly applied, the TSM test provides a simple framework for analyzing obviousness: look for an explicit and straightforward teaching to combine the references.

KSR provides an illustrative example of the simplification afforded by rigidly applying the TSM test. Teleflex, Inc. asserted claim four of U.S. Patent No. 6,237,565—invented by Steven J. Engelgau ("the Engelgau patent")—against *KSR* for infringement.⁷⁰ Claim four covers an apparatus that includes an electronic sensor and an adjustable automobile gas pedal, where the pedal's

⁶⁴ For example, the concern over hindsight bias as discussed *supra* Part II.A.

⁶⁵ See CHISUM, *supra* note 36, § 5.04[1]:

The conclusion as to the obviousness of an invention turns on whether a hypothetical person with ordinary skill and knowledge in the art to which the invention pertains with full knowledge of all the pertinent prior art, when faced with the problem to which the claimed invention is addressed, would be led naturally to the solution adopted in the claimed invention or at least would naturally view that solution as an available alternative.

Id.

⁶⁶ Since it must reflect the "pertinent prior art." *See id.*

⁶⁷ And it must be measured "at the time the invention was made," a time that is likely to be years earlier than the time of litigation, or even issuance. 35 U.S.C. § 103(a) (2006).

⁶⁸ *Cf.* Atlantic Works v. Brady, 107 U.S. 192, 200 (1883) ("It was never the object of [patent] laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures.").

⁶⁹ 35 U.S.C. § 103(a) ("Patentability shall not be negated by the manner in which the invention was made.").

⁷⁰ Teleflex, Inc. v. KSR Int'l Co., 298 F. Supp. 2d 581, 583–84 (E.D. Mich. 2003); U.S. Patent No. 6,237,565 (filed Aug. 22, 2000).

position is transmitted to a computer that controls the engine throttle.⁷¹ The patentee admitted that both the adjustable pedal assembly and the electronic throttle sensor were already known before Engelgau's patented invention.⁷² The invention was, in essence, the particular choice of placement of the sensor, i.e., on the support bracket of the pedal assembly.⁷³ In finding the claimed invention obvious under the TSM test, the district court relied primarily on the teaching of the Asano reference.⁷⁴ The court found that Asano taught every element of the structure and function of the claimed invention, "except those relating to an electronic pedal position sensor,"⁷⁵ and that the electronic sensor was fully de-

⁷¹ *Teleflex*, 298 F. Supp. 2d at 586 (quoting the Engelgau patent, col. 6, lines 17–36):

Claim 4 of the [Engelgau] patent broadly claims the following:

A vehicle control pedal apparatus (12) comprising:

a support (18) adapted to be mounted to a vehicle structure (20);

an adjustable pedal assembly (22) having a pedal arm (14) moveable in force [sic] and aft directions with respect to said support (19);

a pivot (24) for pivotally supporting said adjustable pedal assembly (22) with respect to said support (18) and defining a pivot axis (26); and

an electronic control [(28)] attached to said support (18) for controlling a vehicle system;

said apparatus (12) characterized by said electronic control (28) being responsive to said pivot (24) for providing signal (32) that corresponds to pedal arm position as said pedal arm (14) pivots about said pivot axis (26) between rest and applied positions wherein the position of said pivot (24) remains constant while said pedal arm (14) moves in fore and aft directions with respect to said pivot (24).

⁷² *See* *KSR Int'l Co., v. Teleflex, Inc.*, No. 04-1350, 2006 U.S. Trans. LEXIS 77, at *52–53 (U.S. Trans. 2006).

⁷³ *See id.* at *52 ("JUSTICE STEVENS: The invention, to use an old-fashioned term, is the decision of where to put the control. MR. GOLDSTEIN: That is the extent of the entire invention.").

⁷⁴ *Teleflex*, 298 F. Supp. 2d at 592; U.S. Patent No. 5,010,782 (filed July 28, 1989).

⁷⁵ *Teleflex, Inc. v. KSR Int'l Co.*, 298 F. Supp. 2d 581, 592 (E.D. Mich. 2003) ("Specifically, Asano teaches an adjustable pedal assembly pivotally mounted on a support bracket with the pedal moving in a fore and aft directions [sic] with respect to the support and the pivot remaining in a constant position during movement of the pedal arm."). Asano is important because it was not before the Examiner, and yet it described every structural aspect of the claimed invention. *Id.* at 595. The Examiner allowed the claim based on:

[A]n added structural limitation, wherein the position of said pivot (24) remains constant while said pedal arm (14) moves in fore and aft directions with

scribed in multiple references, for example U.S. Patent No. 5,385,068 granted to White et. al.⁷⁶ With respect to the final element of proof of obviousness under the TSM test, the court found a suggestion to combine by examining such references as the Rixon patent,⁷⁷ which teaches the combination of an electronic sensor with a non-adjustable gas pedal, and the Smith patent,⁷⁸ which teaches a solution for the wire chafing problem in Rixon, i.e., placing the sensor on a non-moving part of the pedal assembly.⁷⁹ The district court found that these references were all in the same field of endeavor and generally addressed similar or overlapping problems.⁸⁰ This subject matter overlap, in light of industry needs, would provide the requisite teaching, suggestion, or motivation to make the combination of prior art elements and thus render the invention of the Engelgau patent obvious.⁸¹

The Federal Circuit disagreed ruling that the lower court had not made “finding[s] as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of [the] invention to make the combination in the manner claimed.”⁸² Specifically, the lower court failed since it did not focus on the “precise problem that the patentee was trying to solve,”⁸³ which was “to design a smaller, less complex, and less expensive electronic pedal assembly.”⁸⁴ The prior art references addressed different problems: the primary reference, the Asano patent, was directed to solving the “constant ratio problem”;⁸⁵ the Rixon patent suffered from the wire

respect to said pivot (24). . . . Asano, however, discloses a pivot that does remain in a constant position while the pedal arm moves back and forth.

Id. (internal quotation marks omitted). The court agreed with the defendant that if Asano had been cited to the Examiner, the claim would have been rejected. *Id.*

⁷⁶ *Id.* at 592; U.S. Patent No. 5,385,068 (filed Dec. 18, 1992).

⁷⁷ U.S. Patent No. 5,819,593 (filed Aug. 17, 1995).

⁷⁸ U.S. Patent No. 5,063,811 (filed July 9, 1990).

⁷⁹ *Teleflex, Inc. v. KSR Int’l Co.*, 298 F. Supp. 2d 581, 594 (E.D. Mich. 2003). Thus, these references, Smith in particular, address the placement of the electronic sensor on the pedal assembly. *Id.*

⁸⁰ *Id.* at 593–95.

⁸¹ *Id.* at 594–95.

⁸² *Teleflex, Inc. v. KSR Int’l Co.*, 119 F. App’x 282, 288 (Fed. Cir. 2005) (quoting *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000)) (alteration in original).

⁸³ *Id.* Imagine how specific an inventor could be in describing the problem to be solved by his invention to avoid combination of references, especially where, as here, the Federal Circuit allowed the recited “problem” to govern the scope of the claims in determining the relevance of prior art.

⁸⁴ *Id.*

⁸⁵ *Id.*

chafing problem that the Engelgau patent attempted to solve;⁸⁶ and the Smith patent, although directed to wire chafing, would not necessarily lead to attaching the sensor to the support bracket.⁸⁷ Due to the different problems sought to be resolved by each reference, the lower court failed to provide a sufficient motivation to combine the references.⁸⁸

The Federal Circuit's application of the TSM test in this case is so narrow that it actually precludes analysis: in order for the prior art references to have rendered this claim obvious, they would have had to recite precisely the same purpose as was recited in the Engelgau patent. There was no need to determine what was close enough for the ordinarily skilled artisan, nor what kind of inferences could be drawn from a reference directed to a slightly different problem even within the field of adjustable gas pedal assemblies having electronic throttle controls.⁸⁹ Worse yet, the statements made by the applicant and PTO in the prosecution history were irrelevant to the Federal Circuit despite the fact that the applicant had added a limitation to the asserted claim regarding a constant pedal pivot position to overcome a prior art rejection, and that limitation was precisely taught by the Asano patent, which had not been before the examiner.⁹⁰ The Federal Circuit approach was also inconsistent with what was taught in the Engelgau patent itself; the claimed invention was not restricted to a "smaller, less complex, and less expensive pedal assembly."⁹¹ As discussed above, the claim was to a combination of an adjustable pedal assembly, and an electronic sensor, where the sensor is placed on the support bracket.⁹²

⁸⁶ *Id.*

⁸⁷ *Id.* at 287–89.

⁸⁸ *Teleflex, Inc. v. KSR Int'l Co.*, 119 F. App'x 282, 288–89 (Fed. Cir. 2005).

⁸⁹ *Cf. Dann v. Johnston*, 425 U.S. 219, 228 (1976):

[T]he obviousness test of § 103 is not one which turns on whether an invention is equivalent to some element in the prior art but rather whether the difference between the prior art and the subject matter in question is a difference sufficient to render the claimed subject matter unobvious to one skilled in the applicable art.

Id. (internal quotation marks omitted).

⁹⁰ *Teleflex*, 119 F. App'x at 287–88. Note the contrast with the Supreme Court's approach in addressing the limiting effects of the prosecution history of the Calmar patents in *Graham*. See *Graham v. John Deere Co.*, 383 U.S. 1, 34 (1966) ("Here, the patentee obtained his patent only by accepting the limitations imposed by the Examiner. The claims were carefully drafted to reflect these limitations and Cook Chemical is not now free to assert a broader view of Scoggin's invention.").

⁹¹ See *Teleflex*, 119 F. App'x at 288.

⁹² *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 423–25 (2007).

C. *The TSM Test Rendered Obviousness Analysis Opaque*

It is easy to see how the TSM test sets the bar for patentability too low; the obviousness of an invention is based on a reading of the patent that is significantly narrower than the scope of protection, that is, what infringes is much broader than what can fairly lead to a finding of invalidity. What is perhaps a more subtle consequence, however, is that in focusing so narrowly on the signposts of how to evaluate the invention for obviousness, the Federal Circuit's application of the TSM test discarded so much pertinent information as to badly distort the inquiry. The test does not require more than a mechanical reading of the patent or the art at issue. Under the "problem to be solved" prong of the TSM test, whatever the patentee chose to recite as the purpose of the invention, however narrow, was the litmus test for combination. In order to combine references, the challenger needed to find the exact same recitation of a problem in those references.⁹³ Neither the court nor the jury, in evaluating the issue of obviousness, which is "based on underlying findings of fact,"⁹⁴ needed to understand the technology or the perspective of the person of ordinary skill, or for that matter the prosecution history of the patent or the claim scope. All that was needed was an understanding of the explicitly-stated purposes of the invention and the various references before the fact-finder. It is this form of narrow application of the TSM test by the Federal Circuit, placing a high evidentiary burden on the Patent Office or on a patent challenger to prove obviousness, that raised objections and calls for reform by the FTC⁹⁵ and the United States,⁹⁶ as well as other amici in *KSR*.⁹⁷ While an approach requiring such explicit and express instructions and sometimes the matching of problems is undoubtedly easy to apply, it will miss the mark in many instances and make the validity of a patent impossible to determine. Many have pointed out the gap with respect to explicit

⁹³ A similarly mechanical reading of the patent and the art was inevitable to find the "teaching, suggestion, or motivation" in an explicit teaching. While the Federal Circuit emphasized more flexibility in applying the TSM test, particularly in decisions rendered after the Supreme Court granted review in *KSR*, the patent community widely recognized the test as becoming increasingly rigid and narrow. See *supra* text accompanying notes 40–48.

⁹⁴ *In re Kahn*, 441 F.3d 977, 985 (Fed. Cir. 2006).

⁹⁵ See FTC REPORT, *supra* note 2, at 15.

⁹⁶ See Brief for the United States as Amicus Curiae Supporting Petitioner at 19, *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) (No. 04-1350), 2006 WL 2453601 ("The Federal Circuit's test is problematic because the factual showing that it requires may be difficult or impossible to make, even though the combination would have been obvious to a person having ordinary skill in the art.").

⁹⁷ See, e.g., IBM Amicus Brief, *supra* note 21, at 5.

teachings in fields such as software development where inventors do not publish discursive descriptions of their work or its purpose.⁹⁸ But it is the lack of focus on the substance of the invention or the true nature of the technology (through the eyes of the person of ordinary skill in the art, or “PHOSITA”) that yields absurd results.

Although obviousness is ultimately a question of law,⁹⁹ the underlying issues set forth in *Graham*—the scope and content of the prior art, the level of ordinary skill in the art, and the differences between the prior art and the invention at issue—are all issues of fact.¹⁰⁰ These issues, and often the ultimate issue of obviousness itself are increasingly tried to juries.¹⁰¹ In 2006, the year before *KSR* was decided, of the 102 patent cases that went to trial, seventy percent were tried before a jury.¹⁰² Although special verdicts are often used in patent cases,¹⁰³ extensive research by Judge Kimberly A. Moore shows that these special verdicts do not ask detailed, meaningful questions,¹⁰⁴ and can be character-

⁹⁸ See Christopher Wong, Symposium, *Community Service: Adapting Peer Review to the Patenting Process*, 4 I/S: J.L. & POL’Y FOR INFO. SOC’Y 31, 44 (“The innovation in the computer software industry is cutting-edge and much of the know-how is not contained in easy-to-find academic journals, making it the area of patentability that suffers most from the information deficit.”).

⁹⁹ *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 427 (2007).

¹⁰⁰ *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

¹⁰¹ See Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 365–66 (2000) [hereinafter *Black Box*] (noting that from 1968 to 1970, 2.8% of patent cases were tried to juries, while during the period from 1997 to 1999, that proportion had risen to 59%).

¹⁰² In fiscal year 2008, 63% of all patent cases (69 out of 109) were tried before a jury. ADMINISTRATION OFFICE OF U.S. COURTS, U.S. DISTRICT COURTS—CIVIL CASES TERMINATED, BY NATURE OF SUIT AND ACTION TAKEN, DURING THE 12-MONTH PERIOD ENDING SEPTEMBER 30, 2008 167 (2008), <http://www.uscourts.gov/judbus2008/appendices/C04Sep08.pdf>. While *KSR* may eventually affect whether patent cases are generally tried before juries, it is too soon after the decision to draw any definitive conclusions.

¹⁰³ See Kimberly A. Moore, Essay, *Juries, Patent Cases, & a Lack of Transparency*, 39 HOUS. L. REV. 779, 783 (2002) [hereinafter *Juries*].

¹⁰⁴ *Id.* at 784–85:

In my review of the special verdict forms actually employed, I found a few detailed, meaningful verdicts; but generally, the special verdict forms varied between sparse and completely thoughtless declarations of which party the jury preferred. For example, in several cases, the special verdict forms actually denoted on the form exactly how to answer the questions so as to result in a win for a particular party

Id. (footnotes omitted).

rized as “sparse and completely thoughtless declarations of which party the jury preferred.”¹⁰⁵ Putting aside issues such as jury bias and oversimplification of complex patent issues,¹⁰⁶ the majority of patent cases addressing obviousness do not develop or apply any meaningful jurisprudence. Instead, the jury resolves the issue without any detail in a special verdict form, and without any meaningful analysis by the court.

The very nature of a “black box” jury verdict renders it impossible to review.¹⁰⁷ On appeal, the Federal Circuit simply presumes the jury resolved all factual issues in favor of the verdict winner,¹⁰⁸ and affords such factual determinations a high degree of deference.¹⁰⁹ This leaves the appellate court in a very difficult position when reviewing jury determinations of obviousness, since it only has conclusive determinations to work with and the record is not properly focused with respect to the obviousness issue.¹¹⁰ The result is that, at least in jury trials, neither the district courts nor the Federal Circuit develop meaningful guidance for obviousness determinations. Even if such guidance existed, one cannot predict the result of an obviousness adjudication since the Court leaves the issue entirely to the jury and then reviews it deferentially, without a record.

¹⁰⁵ See *id.* at 785 (reviewing validity and obviousness special verdict forms).

¹⁰⁶ See *Black Box*, *supra* note 101, at 368–69.

¹⁰⁷ *Juries*, *supra* note 103, at 801. This opacity renders the jury verdict beyond not only verification but also criticism—it is impossible to tell whether or not the jury resolved technical issues appropriately. See *id.*

¹⁰⁸ See, e.g., *Jurgens v. McKasy*, 927 F.2d 1552, 1557 (Fed. Cir. 1991) (explaining that, in reviewing jury decisions, the court presumes the jury resolved all factual disputes in favor of the verdict winner).

¹⁰⁹ The jury’s findings are reviewed for substantial evidence and the court’s factual findings for clear error. See *Juries*, *supra* note 103, at 790–91 (“[T]he standard of review the court employs when reviewing jury verdicts on factual questions, substantial evidence, is highly deferential. It is technically more deferential than the standard applied to judge factfindings, clear error, although there is little practical difference between the two.”) (footnotes omitted). While these are both deferential standards, the latter is intended to be less so. See *id.*; see also *In re Zurko*, 258 F.3d 1379, 1384 (Fed. Cir. 2001) (“The substantial evidence standard has been analogized to the review of jury findings, and it is generally considered to be more deferential than the clearly erroneous standard of review.”). As Judge Moore explains, with respect to judge-made fact-findings, detailed findings must be presented on the record for appellate review, marking a vast difference between the two scenarios. See *Juries*, *supra* note 103, at 791 (“In bench trials, the judge is required to articulate findings of fact and conclusions of law that explain and support her judgment” (citing Fed. R. Civ. P. 52 (requiring judges to state findings of fact and conclusions of law on the record in bench trials))).

¹¹⁰ See *Juries*, *supra* note 103, at 791. The result is inefficient, the entire record must be reviewed.

This process leaves the patent community with little confidence in the judicial system's ability to properly adjudicate patent disputes.¹¹¹

The combination of these characteristics of the TSM test led to a somewhat paradoxical result: the record of patent prosecution files and the opinions of the district courts and Federal Circuit contained an insufficient substantive analysis of obviousness since examiners could not sustain rejections, and also because the question of obviousness was often left entirely to the jury to resolve. Despite the simplistic and strict requirements of the rigidly-applied TSM test, it provided no guidelines for inventors or the public to determine with any degree of certainty if inventions were patentable or whether actions fell within the scope of an issued patent.¹¹² To the extent that the court itself analyzed inventions, it was often done in the mechanical and uninformative way of the Federal Circuit in *KSR*: by requiring explicit evidence of something that did not appear to require, and should not have required, any proof. Against this background the Court decided *KSR*.

III. THE *KSR* DECISION HAS LED TO THE DEVELOPMENT OF A REBUTTABLE PRESUMPTION OF COMBINABILITY

Since the *KSR* decision, lower courts and the PTO have developed an approach to obviousness to distill the Supreme Court's guidance into workable rules. Decisions by the Board and the courts suggest application of a "presumption of combinability" as a way to focus the Court's admonition to apply more flexibility to the obviousness inquiry.

A. *The Supreme Court Establishes a More Flexible Approach in KSR*

In *KSR*, the Supreme Court affirmed the baseline test for obviousness set forth some four decades earlier in *Graham*.¹¹³ In reversing the Federal Cir-

¹¹¹ Judge Moore suggests that detailed special verdicts could improve confidence. *See id.* at 801 ("[T]he Federal Circuit [should] mandate the use of meaningful special verdict forms for discrete patent issues such as obviousness and equivalents. Such a mandate would increase the reviewability, accuracy, and efficiency of the jury verdicts, ultimately improving confidence in the judicial system.").

¹¹² While one contention of this article is that the TSM test sets the bar too low as a result of its strict requirements of proof, the lack of guidance from prosecution and litigation records renders it impossible to define the boundary between valid and invalid with any level of confidence.

¹¹³ *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 427 (2007).

cuit, the Court focused on the more refined level of analysis required for comparing the prior art to the invention, which in the context of Federal Circuit jurisprudence was essentially embodied in the TSM test and its manner of application.¹¹⁴ While the Court confirmed that proving obviousness would entail a determination of “an apparent reason to combine the known elements in the fashion claimed by the patent at issue,”¹¹⁵ analysis of such a “reason” according to the KSR Court is significantly different from the TSM test. The Court began “by rejecting the rigid approach of the Court of Appeals,”¹¹⁶ contrasting it with the “expansive and flexible approach” set forth by its own precedents.¹¹⁷ The Federal Circuit took too cramped a view of what would suffice for the person of ordinary skill to combine references.¹¹⁸ By looking only to the specific problem the patentee was trying to solve, the TSM test failed to recognize the important and objective perspective of the person of ordinary skill.¹¹⁹ The statutory question is what is obvious to that person, such that “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.”¹²⁰ The person of ordinary skill is capable of using “[c]ommon sense” to see “that familiar items may have obvious uses beyond their primary purposes,” because that person “is also a person of ordinary creativity, not an automaton.”¹²¹ The Court also reasoned that “obvious to try” may be a good signpost for analysis;¹²² “[w]hen there is a design need or market pressure to solve a problem and there

¹¹⁴ See generally *id.*

¹¹⁵ *Id.* at 418.

¹¹⁶ *Id.* at 415. As the Court noted, the Federal Circuit decisions that predated its opinion in the case and post-dated the decision to hear the case, applied a more flexible test that raised the bar on obviousness. See *id.* at 421–22. This trend has been observed by a number of authors. See, e.g., Joshua D. Sarnoff, Bilcare, KSR, *Presumptions of Validity, Preliminary Relief, and Obviousness in Patent Law*, 25 CARDOZO ARTS & ENT. L.J. 995, 1036 (2008).

¹¹⁷ KSR, 550 U.S. at 415.

¹¹⁸ See *id.* at 420–21.

¹¹⁹ See KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398, 420–21 (2007).

¹²⁰ *Id.* at 420.

¹²¹ *Id.* at 420–21.

¹²² *Id.* at 421. Note that the Federal Circuit’s pre-KSR “ban” on using an “obvious to try” analysis—which was primarily applied in cases in the chemical field—was not an absolute bar but in some sense reflected an attempt to “determin[e] the weight that should be given to the existence of a degree of predictability in the art when an invention results from arduous and expensive research that follows predicted directions.” See CHISUM, *supra* note 36, § 5.04[1][e][vii][g]. While the Federal Circuit disapproved of “obvious to try” as a standard, it nevertheless recognized that absolute certainty was not required for showing obviousness. See *id.*

are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”¹²³ Finally, the Court admonished the Federal Circuit for establishing a rule that overcompensated for the risk of hindsight by ignoring common sense as well as the Court’s precedents.¹²⁴

While the Supreme Court made clear the failings of the Federal Circuit’s TSM test, aside from what can be gleaned in the negative, only certain positive guidelines were set forth in the opinion and there is no single test adduced for determining obviousness.¹²⁵ The overriding theme is predictability. For example, when one combines known elements according to known methods to achieve a predictable result, the combination is likely obvious.¹²⁶ Variations of existing solutions and known techniques can be used in other fields or to improve similar devices, so long as the adaptation is within the capabilities of the person of ordinary skill.¹²⁷ The issue is “whether the improvement is more than the predictable use of prior art elements according to their established functions.”¹²⁸ In its Examination Guidelines, the PTO sums this guidance through a list of scenarios.¹²⁹ The Guidelines list seven possible situations corresponding roughly to the individual examples described by the Court, including the TSM test, since the Court agreed that if a situation met that test then certainly the

¹²³ KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398, 421 (2007).

¹²⁴ *Id.*

¹²⁵ *See generally id.*

¹²⁶ *Id.* at 415–16.

¹²⁷ *Id.* at 417.

¹²⁸ *Id.*

¹²⁹ Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in KSR International Co. v. Teleflex Inc., 72 Fed. Reg. 57,526 (Oct. 10, 2007) [hereinafter PTO Examination Guidelines]. The guidelines state that they are intended to assist examiners in making obviousness determinations, are meant to be consistent with existing law, and further that they are not “substantive rule making” and thus do not have the force and effect of law. *See id.* at 57,526. Notwithstanding the recent controversy over USPTO rulemaking in *Tafas v. Doll*, 559 F.3d 1345 (Fed. Cir. 2009), *reh’g granted en banc*, 328 F. App’x 658 (Fed. Cir. 2009) (reinstating the appeal for en banc rehearing), examiners would be expected to make obviousness determinations following these guidelines unless and until the guidelines are challenged in court or changed by the Patent Office. U.S. PAT. & TRADEMARK OFFICE, DEP’T OF COM., MANUAL OF PATENT EXAMINING PROCEDURE § 2141 (8th ed., 7th rev. 2008) [hereinafter M.P.E.P.]. In addition, applicants may only base arguments during patent prosecution on the substantive law, not on whether an examiner is or is not adhering to the guidelines. *See* PTO Examination Guidelines, *supra*, at 57,526. Thus, regardless of the true enforceability of the guidelines, examiners can be expected to follow them and applicants will need to overcome resulting obviousness rejections during prosecution without challenging the guidelines themselves.

claimed invention was obvious.¹³⁰ An examiner facing perhaps a hundred new inventions in the course of a year¹³¹ has a difficult task in choosing among these methods for each such invention and applying them consistently, at least until more experience with varying inventions and technologies is gained. It will likely not be any easier for the courts or the Board. An examination of opinions of the Federal Circuit and the Board, as well as the PTO Examination Guidelines reveals the use of a more abbreviated analysis, or “short cut” to incorporate the analysis in *KSR*. This short cut is best described as a “presumption of combinability.”¹³²

¹³⁰ See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–19 (2007). The PTO Examination Guidelines include the following additional “rationales” for finding obviousness:

- (A) Combining prior art elements according to known methods to yield predictable results;
- (B) Simple substitution of one known element for another to obtain predictable results;
- (C) Use of known technique to improve similar devices (methods, or products) in the same way;
- (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (E) “Obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art

PTO Examination Guidelines, *supra* note 129, at 57,529.

¹³¹ In 2008, over 450,000 utility patent applications were filed, to be examined by a little under 6,000 patent examiners. See U.S. PATENT AND TRADEMARK OFFICE, U.S. PATENT STATISTICS CHART CALENDAR YEARS 1963–2008, http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm (last visited Jan. 16, 2010); U.S. PATENT AND TRADEMARK OFFICE, PERFORMANCE AND ACCOUNTABILITY REPORT FISCAL YEAR 2008, http://www.uspto.gov/web/offices/com/annual/2008/oai_05_wlt_28.html (last visited Jan. 16, 2010). Assuming the distribution varies from examiner to examiner, it is likely that some examine well over the 75 statistical average per year.

¹³² Or perhaps more accurately a “rebuttable presumption of combinability” since the applicant or patentee can introduce evidence to overcome it. Such a rebuttable presumption is not inconsistent with the statutory presumption of validity applicable to issued patents. See 35 U.S.C. § 282 (2006). A presumption of combinability does not, by itself, establish obviousness, because a challenger must first actually find all the elements of the invention in the prior art and because the presumption is rebuttable—once established, the burden is merely shifted to the patentee to come forward with rebuttal evidence. In addition, the ultimate burden of persuasion remains on the patent challenger. The presumption that prior art references are combinable is thus consistent with establishment of a *prima facie* case of obviousness.

B. The PTO Is Applying a Rebuttable Presumption of Combinability

The reasoning of the Federal Circuit and the Board evidences application of a presumption in determining obviousness after *KSR*. While such a presumption may not be applied in all cases, the Board and Federal Circuit use it in many cases as a proxy for the kind of analysis that courts have long avoided under the TSM test, as discussed above in Part II.C. Two Board opinions, *Ex parte Smith*¹³³ and *Ex parte Catan*,¹³⁴ issued shortly after *KSR*, are illustrative.¹³⁵ The claimed invention in *Smith* is a book containing a purportedly new “pocket insert,” which is a folder formed on an inside cover of a bound book for holding diskettes or CD-ROMs.¹³⁶ The Board found one claim anticipated,¹³⁷ and found the remaining claims obvious.¹³⁸ The examiner had rejected some of the claims based on a combination of U.S. Patent Nos. 5,540,513 granted to Wyant and 1,495,953 granted to Dick.¹³⁹ The examiner based the remaining obviousness rejections on a combination of Wyant, Dick, and U.S. Patent No. 4,965,948 granted to Ruebens.¹⁴⁰ The former rejection turned on whether it would have been obvious to combine Dick, which taught creating a two-ply seam for the pocket insert by stitching two separate sheets together, with Wyant, which taught creating a two-ply seam by folding one sheet to create a seam along the folded edge, to render obvious the claimed “continuous two-ply seam” made by

See Philippe Ducor, *Recombinant Products and Nonobviousness: A Typology*, 13 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1, 17–18 (1997) (describing instances where, based on structural similarity between the claimed and prior art compounds, a rebuttable presumption of obviousness is established by making a prima facie case based on certain enumerated conditions); IBM Amicus Brief, *supra* note 21, at 23 n.8 (explaining that “evidentiary burden-shifting in general is consistent with the presumption of validity”).

¹³³ 83 U.S.P.Q.2d (BNA) 1509 (B.P.A.I. 2007).

¹³⁴ 83 U.S.P.Q.2d (BNA) 1569 (B.P.A.I. 2007).

¹³⁵ A third opinion, *Ex parte Kubin*, 83 U.S.P.Q.2d (BNA) 1410 (B.P.A.I. 2007), released on the same day as *Ex parte Smith* and *Ex parte Catan*, also indicates the Board’s application of a higher standard of patentability after *KSR*. See *id.* at 1414. However, the Federal Circuit’s treatment of inventions in the chemical arts appears to be mixed in the sense that it does not always reflect the Court’s opinion in *KSR* by, for example, treating certain arts in their entirety as less predictable. See discussion *infra* Part III.C.1.

¹³⁶ *Smith*, 83 U.S.P.Q.2d (BNA) at 1511–12.

¹³⁷ *Id.* at 1513.

¹³⁸ *Id.* at 1516, 1518.

¹³⁹ *Ex parte Smith*, 83 U.S.P.Q.2d (BNA) 1509, 1512, 1516 (B.P.A.I. 2007).

¹⁴⁰ *Id.* at 1512, 1518.

gluing two sheets together.¹⁴¹ In establishing the appropriate test, the Board cited *KSR*: “[t]he operative question in this ‘functional approach’ is thus ‘whether the improvement is more than the predictable use of prior art elements according to their established functions.’”¹⁴² The Board then held the claims obvious according to the following steps:

- (1) each of the claimed elements is found within the scope and content of the prior art;
- (2) one of ordinary skill in the art could have combined the elements as claimed by methods known at the time the invention was made; and
- (3) one of ordinary skill in the art would have recognized at the time the invention was made that the capabilities or functions of the combination were predictable.¹⁴³

The first part of the test simply states that all the elements are found in the art, leaving the Board to focus on what has to be shown to combine these elements.¹⁴⁴ The second step is certainly relevant, but imposes a high burden and if not met would imply that the invention as claimed was not enabled, thus failing to meet patentability requirements on other grounds.¹⁴⁵ The third step is the only remaining that could serve for *KSR*’s requirement of showing a “reason to combine.”¹⁴⁶ The Board is simply requiring “that the capabilities or functions of the combination were predictable.”¹⁴⁷ This is a statement of the characteristics of the final product—the invention as claimed does not exhibit any surprising aspects, it is “predictable.” In other words, the combination achieves no unexpected results.¹⁴⁸ In fact, the Board bolsters the three element test by pointing

¹⁴¹ *Id.* at 1510. The affirmance of the second rejection does not add any obviousness analysis, and therefore will not be discussed separately.

¹⁴² *Id.* at 1515 (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 415, 417 (2007)).

¹⁴³ *Id.* at 1516–17.

¹⁴⁴ *Id.* at 1516. Applicant argued that neither reference taught gluing a two-ply seam, but given the fact that the references both discussed that any suitable means could be used to attach, the Board found this element disclosed in the art. *Id.* at 1516–17.

¹⁴⁵ The enablement requirement for patentability is based on the following language in the patent statute: “[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.” 35 U.S.C. § 112 (2006).

¹⁴⁶ See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

¹⁴⁷ *Ex parte Smith*, 83 U.S.P.Q.2d (BNA) 1509, 1516–17 (B.P.A.I. 2007).

¹⁴⁸ The Board re-states this according to a different approach found in *KSR*, indirectly rejecting any additional requirement to find a “teaching, suggestion, or motivation” as required by the former Federal Circuit TSM test: “Because this is a case where the improvement is no more

out that the appellant had not presented any arguments that combining the teachings of these references was “uniquely challenging or difficult for one of ordinary skill in the art.”¹⁴⁹ But this analysis turns the inquiry on its head: instead of asking for the examiner to provide positive proof of a reason to combine references, the court asks for a showing from the applicant of unexpected results or evidence of a unique challenge faced by the inventor.

Notwithstanding this abrupt analysis from the Board, the invention at issue in this case was a very straightforward and simple mechanical invention that would likely have been found obvious under the Federal Circuit’s pre-*KSR* TSM test. Important to glean from the case is the reasoning of the decision and the fact that it was among the three decisions issued by the Board right after *KSR*, presumably meant to set the tone and approach for examiners and applicants alike.

The Board decided *Ex parte Catan* on the same day it decided *Ex parte Smith*.¹⁵⁰ The invention in *Catan* was directed to a “consumer electronics device” for enabling remote access to account information to complete purchase transactions.¹⁵¹ The only difference between the prior art system and the claims at issue was that in place of using a personal identification number or “PIN,” a bioauthentication means, e.g., fingerprint, was used to verify identity.¹⁵² The Board’s analysis in *Catan* is even more straightforward than in *Smith*, given the clear substitution. Following one of the lines of reasoning in *KSR*, the Board states: “[w]here, as here [an application] claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.”¹⁵³ The substitution of course is the bioauthentication means for the PIN. The Board again bolsters the argument by stating that the applicant provided no evidence of “an unexpected result” or that the combination was “beyond the skill of one having ordinary skill in the art.”¹⁵⁴

than ‘the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement,’ no further analysis was required by the Examiner.” *Id.* at 1518 (quoting *KSR*, 550 U.S. at 417).

¹⁴⁹ *Id.* at 1517.

¹⁵⁰ *Ex parte Catan*, 83 U.S.P.Q.2d (BNA) 1569, 1569 (B.P.A.I. 2007).

¹⁵¹ *Id.* at 1570.

¹⁵² *See id.* at 1575–76. U.S. Patent No. 5,845,260 granted to Nakano disclosed the majority of elements corresponding to the PIN-authenticated account access device; U.S. Patent Nos. 4,837,422 granted to Dethloff and 5,721,583 granted to Harada disclosed the bioauthentication means in other types of consumer electronics devices. *Id.* at 1570, 1574–75.

¹⁵³ *Id.* at 1575 (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007)).

¹⁵⁴ *Id.*

The Board's analysis in *Smith* and *Catan* is not limited to any specific category of the PTO Examination Guidelines. For example, the opinion in *Smith* also characterizes the combination as a "substitution": "[b]ecause this is a case where the improvement is no more than 'the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement,' *no further analysis was required by the Examiner.*"¹⁵⁵ However, the invention in *Smith* is not clearly a "substitution" given the absence of any glued-together two-ply seams in the art.¹⁵⁶ In *Catan*, the Board goes on to compare the analysis to the Federal Circuit's first post-*KSR* opinion,¹⁵⁷ calling it "an adaptation of an old invention . . . using newer technology that is commonly available and understood in the art."¹⁵⁸ It would appear that the Board is struggling somewhat to choose the best argument for an obviousness analysis in *Catan* and *Smith*, but is not struggling to arrive at a result. In both cases, the Board is finding a proxy—such as the substitution of known elements, which will often be true for combination inventions, to achieve predictable results to serve as the reason to combine elements found in the art in reaching the conclusion of obviousness.

¹⁵⁵ *Ex parte Smith*, 83 U.S.P.Q.2d (BNA) 1509, 1518 (B.P.A.I. 2007) (emphasis added) (quoting *KSR*, 550 U.S. at 417). [Actually, *Smith* slightly misquotes *KSR*, which stated "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement" (emphasis added) [Eds.]]

¹⁵⁶ Although note that the PTO Examination Guidelines cite *Ex parte Smith*, not *Ex parte Catan*, as an example of the "substitution" rationale B. PTO Examination Guidelines, *supra* note 129, at 57,530.

¹⁵⁷ *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157 (Fed. Cir. 2007). See discussion *infra* Part III.C. In *Leapfrog*, the first Federal Circuit case applying the Supreme Court's decision in *KSR*, the Federal Circuit found obvious a patent covering a children's learning device that entailed applying computer technology to a known electromechanical device. *Leapfrog*, 485 F.3d at 1161.

¹⁵⁸ *Ex parte Catan*, 83 U.S.P.Q.2d (BNA) 1569, 1576 (B.P.A.I. 2007). The PTO Examination Guidelines do not cite *Leapfrog* or *Ex parte Catan* for category C "Use of Known Technique To Improve Similar Devices (Methods, or Products) in the Same Way," nor category D "Applying a Known Technique to a Known Device (Method, or Product) Ready for Improvement to Yield Predictable Results," but instead for category F "Known Work in One Field of Endeavor May Prompt Variations of it for Use in Either the Same Field or a Different One Based on Design Incentives or Other Market Forces if The Variations Would Have Been Predictable to One of Ordinary Skill in the Art." PTO Examination Guidelines, *supra* note 129, at 57,529, 57,530, 57,531, 57,533, 57,534. While the fact patterns in *Leapfrog* and *Ex parte Catan* may have lent themselves to this analysis, it would seem unlikely if not impossible for the Examiner to apply this test during prosecution given the limited resources allocated to prosecuting an average application, and it is clear that this was neither the Examiner's nor the Board's rationale in *Ex parte Catan*. See *Catan*, 83 U.S.P.Q.2d (BNA) at 1576.

The Board's analysis amounts to a presumption—where the elements of the invention are found in the prior art,¹⁵⁹ the art is presumptively combinable. Most telling may be the Board's citation of the Federal Circuit for the relevance of the fact that the inventor "had presented no evidence that the [invention] . . . 'represented an unobvious step over the prior art.'"¹⁶⁰ The Board cites unexpected results, teaching away, and proof that a combination is beyond the capabilities of the person of ordinary skill in the art as ways that the inventor can argue nonobviousness. However, these factors are effectively, and traditionally, rebuttals against the combination of elements, either in the context of establishing a prima facie case or as secondary or objective indications of nonobviousness. In other words, under the Board's analysis, the "reason" to combine is not separately proven, but rather it is presumed if all elements of the invention are found in the prior art in the field of the invention.¹⁶¹ Such elements as teaching away, unexpected results, and proof that a combination is beyond the skill of the PHOSITA, are all effectively rebuttals to the prima facie case of obviousness for which no additional proof beyond the presence of the elements in the relevant prior art is required. Note in this regard that neither silence,¹⁶² nor conflicting data,¹⁶³ will qualify as "teaching away."¹⁶⁴

¹⁵⁹ *Catan*, 83 U.S.P.Q.2d (BNA) at 1574–75. For an obviousness analysis, the scope of prior art is the analogous art, generally understood to encompass art in the inventor's field of invention as well as closely related fields: "prior art includes both references in the art in question and references in such allied fields as a person with ordinary skill in the art would be expected to examine for a solution to the problem." CHISUM, *supra* note 36, § 5.03[1].

¹⁶⁰ *Catan*, 83 U.S.P.Q.2d (BNA) at 1574 (quoting *Leapfrog*, 485 F.3d at 1162); *Smith* 83 U.S.P.Q.2d (BNA) at 1516 (quoting *Leapfrog*, 485 F.3d at 1162).

¹⁶¹ See generally CHISUM, *supra* note 36, § 5.04 (discussing various cases where unexpected results and teaching away are used to rebut prima facie showings of obviousness). Consider also secondary considerations that are unrelated to the technical analysis, but are relevant to the overall conclusion as to obviousness, such as commercial success and long-felt need. See *id.* § 5.05; see also *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) (discussing factual inquiries relating to obviousness).

¹⁶² *Ex parte Smith*, 83 U.S.P.Q.2d (BNA) 1509, 1517 (B.P.A.I. 2007).

¹⁶³ *Ex parte Kubin*, 83 U.S.P.Q.2d (BNA) 1410, 1414 (B.P.A.I. 2007). Note that *Ex parte Kubin* also evidences a change to a higher standard of nonobviousness, as does the Federal Circuit decision affirming the Board on appeal, the Federal Circuit using an analysis based on the "obvious to try" formulation which is commonly used in the chemical arts. See *In re Kubin*, 561 F.3d 1351, 1361 (Fed. Cir. 2009).

¹⁶⁴ "Teaching away" is a well-established doctrine describing evidence that can be presented by a patentee or applicant to rebut a prima facie case of obviousness. See *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1381 (Fed. Cir. 2007) ("A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the

Smith and *Catan* thus evidence a more difficult test of nonobviousness for applicants.¹⁶⁵ The rates of reversal of examiners' decisions by the Board provide supporting evidence. While the USPTO does not keep specific statistics relating to obviousness rejections, studies show that the majority of appealed final rejections are based on obviousness.¹⁶⁶ One can infer from the drop in reversals since the *KSR* decision at least an initial indication of raising the standard for nonobviousness. In the years 2000–2006, the overall reversal rate varied from 34.8–39.6%.¹⁶⁷ In Fiscal Year 2007, the reversal rate dropped to 25.1%;¹⁶⁸ in Fiscal Year 2008 the rate was 23.9%;¹⁶⁹ and in Fiscal Year 2009, the reversal rate to date is 24.6%.¹⁷⁰ Note that the data for 2007 includes seven months of activity before the Supreme Court's *KSR* decision, which was ren-

path that was taken by the applicant.”) (quoting *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994)); see also *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious). Additionally, a reference may teach away from a use when that use would render the result inoperable. *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354 (Fed. Cir. 2001) (citing *In re Spinnoble*, 405 F.2d 578, 587 (C.C.P.A. 1969)).

¹⁶⁵ At least at the PTO. In some instances in the chemical arts, the Federal Circuit may be applying a lower threshold for nonobviousness than *KSR* requires. See discussion *infra* Part III.C.1.

¹⁶⁶ Patently-O, <http://www.patentlyo.com/patent/2009/06/understanding-the-role-of-the-board-of-patent-appeals-ex-parte-rejection-rates-on-appeal.html> (June 19, 2009, 21:29 CST) (“90% of appeals in my hand-scored study included at least one obviousness issue that was decided on appeal. More than half of the appeals (54%) focused only on obviousness.”).

¹⁶⁷ United States Patent and Trademark Office, Receipts and Dispositions by Technology Center, <http://www.uspto.gov/web/offices/dcom/bpai/docs/receipts/index.htm> (last visited Jan. 16, 2010); cf. Dennis D. Crouch, *Understanding the Role of the Board of Patent Appeals: Ex Parte Rejection Rates on Appeal* 12 (Univ. Mo. Sch. of Law Legal Studies Research Paper No. 2009-16, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1423922 (arguing that in general the higher affirmance rates by the Board for obviousness rejections compared to other rejections reflects more relative examiner competence with the issue, while also recognizing that the data is consistent with the notion that applications filed before *KSR* are being subject to a higher standard).

¹⁶⁸ United States Patent and Trademark Office, Receipts and Dispositions by Technology Center Fiscal Year 2007, <http://www.uspto.gov/web/offices/dcom/bpai/docs/receipts/fy2007.htm> (last visited Jan. 16, 2010).

¹⁶⁹ United States Patent and Trademark Office, Receipts and Dispositions by Technology Center Fiscal Year 2008, <http://www.uspto.gov/web/offices/dcom/bpai/docs/receipts/fy2008.htm> (last visited Jan. 16, 2010).

¹⁷⁰ United States Patent and Trademark Office, Receipts and Dispositions by Technology Center Fiscal Year 2009, <http://www.uspto.gov/web/offices/dcom/bpai/docs/receipts/fy2009.htm> (last visited Jan. 16, 2010).

dered at the end of April but the PTO's fiscal year ends at the end of September.¹⁷¹ While it is possible that other factors led to the decline in reversals, it seems likely given the importance of obviousness in PTO patentability determinations¹⁷² that *KSR* is the primary cause of the drop. In addition, the Federal Circuit was much harder on patentees in applying the TSM test after certiorari was granted in June 2006,¹⁷³ so the PTO may have been reacting to that as well in anticipation of the decision. The fact that each Technology Center has provided detailed *KSR* training and examples¹⁷⁴ indicates that the PTO views *KSR* as imposing a significant change in examination practice. Early anecdotal evidence in the form of practitioner commentary further supports this view that examiners are applying a more stringent test "across the board."¹⁷⁵

C. In Many Cases the Federal Circuit Is Also Applying a Rebuttable Presumption of Combinability

The USPTO of course must follow the Federal Circuit, whose decisions since *KSR* have similarly set forth a higher standard for patentability that in many instances incorporates a "presumption of combinability" for elements found in the prior art. The first Federal Circuit case analyzing obviousness after *KSR* is *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*¹⁷⁶ The invention in *Leapfrog* is to an interactive learning device that helps children learn how to

¹⁷¹ See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 398 (2007); United States Patent and Trademark Office, Receipts and Dispositions by Technology Center, <http://www.uspto.gov/web/offices/dcom/bpai/docs/receipts/index.htm> (last visited Jan. 16, 2010).

¹⁷² See *Patently-O*, *supra* note 166.

¹⁷³ *Teleflex, Inc. v. KSR Int'l Co.*, 119 F. App'x 282 (Fed. Cir. 2005), *cert. granted*, 548 U.S. 902 (June 26, 2006) (No. 04-1350); see *KSR*, 550 U.S. at 421–22; see also *supra* note 116 and accompanying text.

¹⁷⁴ See United States Patent and Trademark Office, Examination Training Materials in View of *KSR International Co. v. Teleflex Inc.*, http://www.uspto.gov/web/offices/pac/dapp/opla/ksr/ksr_training_materials.htm (last visited Jan. 16, 2010).

¹⁷⁵ See Erin Coe, *One Year Later, Prosecutors Come to Grips with KSR*, LAW360, Apr. 4, 2008, <http://www.law360.com/articles/52244> ("[P]rosecutors across the board say last April's U.S. Supreme Court decision in *KSR* has made it easier for the U.S. Patent and Trademark Office to reject patent applications based on obviousness."); cf. Susan A. Cahoon & Alton L. Absher III, *Fed. Circ.*, *KSR and Pharms: The First Year and a Half*, LAW360, Dec. 31, 2008, <http://www.law360.com/articles/79987> (arguing that decisions by the Federal Circuit after *KSR* indicate that while obviousness challenges have become easier in the mechanical and electrical arts, the results are mixed in the chemical arts).

¹⁷⁶ 485 F.3d 1157 (Fed. Cir. 2007).

read phonetically.¹⁷⁷ The claimed invention uses computer technology. A letter can be selected from a “depiction of a sequence of letters,” e.g., a special book, thus activating a switch that will produce a sound by communicating with a “sound production device,” e.g., a speaker, through a processor.¹⁷⁸ The claimed device determines which switch to activate to correspond to the chosen letter by using a “reader.”¹⁷⁹ The prior art includes three items: an electro-mechanical device with the same functionality, i.e., sounding out words on a letter-by-letter basis, a processor-based learning toy with somewhat different functionality, and a reader.¹⁸⁰ The court analyzed the prior art and its relationship to the claimed invention in some detail, including the functionality of the electromechanical device and the operation of the processor-based toy.¹⁸¹ The court reasoned that it would have been obvious to combine those elements since the person of ordinary skill would want to achieve benefits such as “decreased size, increased reliability, simplified operation, and reduced cost.”¹⁸² As for the reader, the court simply affirmed the district court’s finding that readers were well known in the art at the time of the invention,¹⁸³ adding a “marketability” justification for its use: “the reasons for adding a reader . . . are the same as those for using readers in other children’s toys—namely, providing an added benefit and simplified use of the toy for the child in order to increase its marketability.”¹⁸⁴ In finding the claim obvious, the court focused on the “goal” of the claimed device to allow letter-by-letter selection of sounds, broadly generalizing that “[a]ccommodating a prior art mechanical device that accomplishes that goal to modern electronics would have been reasonably obvious to one of ordinary skill in designing children’s learning devices [a]pplying modern electronics to

¹⁷⁷ *Id.* at 1158.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ *Id.* at 1161–62.

¹⁸¹ *Id.*

¹⁸² *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

¹⁸³ This finding was based on expert testimony. *See Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, Civ. Action No. 03-927-GMS, 2006 U.S. Dist. LEXIS 13907, at *12–13 (D. Del. Mar. 30, 2006) (“Mr. Milner[, the defendant’s expert,] acknowledged that even the combination of those two prior art references would not have met all of the limitations of claim 25 because neither reference incorporates a reader. Nevertheless, he testified that ‘engineers knew about IBM cards with holes and readers from their earliest days’”) (citation omitted). Note that since this was a bench trial, findings of fact were captured in the trial record, presumably making the case easier for the Federal Circuit to review with respect to any fact findings underlying the obviousness determination, and possibly serving as a motivation for using this case as the first to apply *KSR*.

¹⁸⁴ *Leapfrog*, 485 F.3d at 1162.

*older mechanical devices has been commonplace in recent years.*¹⁸⁵ The reasoning is telling—the court indicates a willingness to find any claimed invention obvious if it can be viewed as the application of modern electronics to an older mechanical device, so long as the two have the same functionality. Recitation of the standard characteristics of “computerization,” such as decreased size, reduced cost, etc., noted above, further support the creation of a broad rule intended to cover any computer adaptation providing that the functionality is known in a different technological form. Taken to the extreme, this approach could find a calculator unpatentable over an adding machine, but it must be viewed in context. If the only technique for computerization at the time of the invention was beyond the skill of the PHOSITA, then presumably the patentee would rebut a prima facie case of obviousness and the court would find the invention nonobvious.¹⁸⁶ Alternatively, if a novel technique were not required but had been claimed, this might preclude a prima facie showing of obviousness altogether.

The opinion in *Leapfrog* reflects a fundamental holding of *KSR*: if the elements are known and their functionality is unchanged then the combination is obvious. Using a known technique or “variation” of computer technology is thus presumptively applicable to transform a known non-computerized technique, and will not be patentable so long as it is not beyond the skill of the PHOSITA.¹⁸⁷

The analysis is not over; the patentee has the ability to introduce evidence relating to secondary considerations of nonobviousness, but these considerations are not necessarily related to the merits of the invention itself. In *Leapfrog*, evidence of secondary considerations, e.g., commercial success, praise,

¹⁸⁵ *Id.* at 1161 (emphasis added).

¹⁸⁶ *Id.* at 1162.

¹⁸⁷ *Leapfrog* is cited as an exemplary case in only one category of the PTO Examination Guidelines, category F: “Known Work in One Field of Endeavor May Prompt Variations of it for Use in Either the Same Field or a Different One Based on Design Incentives or Other Market Forces if The Variations Would Have Been Predictable to One of Ordinary Skill in the Art.” PTO Examination Guidelines, *supra* note 129, at 57,533. The known work is the electro-mechanical learning device, the “predictable variation” is adaptation to modern electronics. *Id.*; see also *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1325–27 (Fed. Cir. 2008) (reversing a jury’s finding of nonobviousness for claims directed to original issuer municipal bond auctions conducted over the internet, where the only inventive aspect was adapting a known method for use with a conventional web browser). Comparing to *Leapfrog*, the court notes that “[t]he record in this case demonstrates that adapting existing electronic processes to incorporate modern internet and web browser technology was similarly commonplace at the time the ‘099 patent application was filed.” *Muniauction*, 532 F.3d at 1326–27.

and long-felt need,¹⁸⁸ did not help the patentee—the court found the case for obviousness so strong that significant secondary considerations could not rebut the conclusion of obviousness.¹⁸⁹

Another case illustrative of the Federal Circuit’s new direction is *In re Icon Health and Fitness, Inc.*,¹⁹⁰ an appeal by a patent applicant from an adverse decision of the Board of Patent Appeals and Interferences. The application in suit claimed a treadmill with a folding base that could swivel into an upright position for easy storage.¹⁹¹ The key limitation in the independent claim, and the focus of the patentability dispute, was a gas spring connecting the base to the upright part of the treadmill with the functional requirement that the spring “assist in stably retaining” the base in the storage position.¹⁹² The prior art included two references applied by the Board and the court: an advertisement for a folding treadmill that the applicant admitted included all limitations of the claim, save the gas spring, and U.S. Patent No. 4,370,766 to Teague (“Teague”).¹⁹³ Teague disclosed a folding bed with a dual-action gas spring that partially supports the weight of the bed in both the closed and open positions.¹⁹⁴

The first part of the court’s analysis focused on the proper claim interpretation, an issue that is relevant to two important concepts.¹⁹⁵ One is procedural—as an appeal from the Board, the proper claim scope is not to be adjudged according to the standard for claim interpretation for issued patents in infringement actions; the PTO “must give claims their broadest reasonable con-

¹⁸⁸ Leapfrog Enters., Inc. v. Fisher-Price Inc., 485 F.3d 1157, 1162 (Fed. Cir. 2007).

¹⁸⁹ *Id.*

The district court explicitly stated in its opinion that Leapfrog had provided substantial evidence of commercial success, praise, and long-felt need, but that, given the strength of the prima facie obviousness showing, the evidence on secondary considerations was inadequate to overcome a final conclusion that claim 25 would have been obvious. We have no basis to disagree with the district court’s conclusion.

Id.; see also *Muniauction*, 532 F.3d at 1328 (finding that for certain secondary considerations, there was an insufficient nexus to the claimed invention, while for others, “the evidence is simply inadequate to overcome a final conclusion that independent claims 1 and 31 are obvious as a matter of law”) (citation omitted).

¹⁹⁰ 496 F.3d 1374 (Fed. Cir. 2007).

¹⁹¹ *Id.* at 1377.

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ *Id.* at 1377–78 (“This provides the benefit of reducing the force required to open the bed from the closed position, while still reducing the force required to lift the bed from the open position.”).

¹⁹⁵ *Id.* at 1379–80.

struction consistent with the specification.”¹⁹⁶ While the broader PTO standard may not have changed the outcome in this case, the court nevertheless dismissed applicant’s argument that the gas springs of the claim should be limited to those that would continue to urge the treadmill into the closed position when it was in the closed position since the claims were not so limited.¹⁹⁷

The second significant issue linked to claim scope was determination of the proper scope and content of prior art for obviousness analysis. It seems logical to focus any validity analysis, including obviousness, on what the inventor actually claimed as the invention, as opposed to the applicant’s description of the problem solved by the invention. The claimed invention is the measure of the property right, and is therefore what is measured for infringement and validity.¹⁹⁸ In *KSR*, the Court identified as one of the Federal Circuit’s errors its myopic focus on the very specific “problem to be solved” recited in the patent, which improperly led the court to discount the applicability of clearly relevant prior art from the analysis: “In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.”¹⁹⁹ Thus, the prior art for an obviousness analysis should be broad enough to encompass what the person of ordinary skill would look to when attempting to solve a problem, and

¹⁹⁶ *In re Icon Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007) (citations omitted). See *Atl. Thermoplastics Co. v. Faytex Corp.*, 970 F.2d 834, 846 (Fed. Cir. 1992), *rehearing en banc denied*, 974 F.2d 1279 (Fed. Cir. 1992) (Nies, J., dissenting):

This court permits the PTO to give claims their broadest reasonable meaning when determining patentability. During litigation determining validity or infringement, however, this approach is inapplicable. Rather the courts must consult the specification, prosecution history, prior art, and other claims to determine the proper construction of the claim language. Thus, accommodating the demands of the administrative process and recognizing the capabilities of the trial courts, this court treats claims differently for patentability as opposed to validity and infringement. . . . In any event, claims mean the same for infringement and validity.

Id. (citations omitted).

¹⁹⁷ See *Icon Health*, 496 F.3d at 1379.

¹⁹⁸ See, e.g., 5A-18A DONALD S. CHISUM, CHISUM ON PATENTS § 18.03 (2009) (“Determination of infringement of a patent requires construction of the meaning of the patent’s claim (or claims) and then application of the claim as construed to the accused product or process.”) (footnote omitted).

¹⁹⁹ See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007).

should be keyed on what was claimed not the specific purposes recited in the patent or the references.²⁰⁰

The *KSR* Court's view of relevant prior art for an obviousness analysis is consistent with the broad notion of "analogous art," which has traditionally defined the proper scope of art for the purpose of evaluating obviousness. Analogous art is prior art "in the field of the applicant's endeavor or, if not, then . . . reasonably pertinent to the particular problem with which the inventor [is] concerned."²⁰¹ The Court's view in *KSR* can be understood in part as an attempt to refocus the obviousness inquiry to more broadly encompass the traditional notion of analogous art.

Consistent with the Court's broad focus, the Federal Circuit, in *In re Icon Health & Fitness, Inc.*,²⁰² disagreed with Icon's argument that Teague was not proper prior art.²⁰³ The Federal Circuit agreed that the folding bed invention described in Teague was in a different field of endeavor, but nevertheless found it to be within the scope of analogous art since it was reasonably pertinent to the problem addressed by Icon.²⁰⁴ The analogous art need only be relevant to the specific claim element in dispute when viewed separately:

²⁰⁰ See *id.* at 420–21.

The second error of the Court of Appeals lay in its assumption that a person of ordinary skill attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem. The primary purpose of Asano was solving the constant ratio problem; so, the court concluded, an inventor considering how to put a sensor on an adjustable pedal would have no reason to consider putting it on the Asano pedal. Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. Regardless of Asano's primary purpose, the design provided an obvious example of an adjustable pedal with a fixed pivot point; and the prior art was replete with patents indicating that a fixed pivot point was an ideal mount for a sensor. The idea that a designer hoping to make an adjustable electronic pedal would ignore Asano because Asano was designed to solve the constant ratio problem makes little sense. A person of ordinary skill is also a person of ordinary creativity, not an automaton.

Id. (citations omitted).

²⁰¹ *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992). See also *CHISUM*, *supra* note 36, § 5.03[1][a].

²⁰² 496 F.3d 1374 (Fed. Cir. 2007).

²⁰³ See *In re Icon Health & Fitness, Inc.*, 496 F.3d 1374, 1379–80 (Fed. Cir. 2007).

²⁰⁴ Icon's folding mechanism was not peculiar to treadmills, but instead generally addressed the problem of weight support and providing a stable resting position. *Id.*

Nothing about Icon’s folding mechanism requires any particular focus on treadmills; it generally addresses problems of supporting the weight of such a mechanism and providing a stable resting position. Analogous art to Icon’s application, when considering the folding mechanism and gas spring limitation, may come from any area describing hinges, springs, latches, counterweights, or other similar mechanisms—such as the folding bed in Teague.²⁰⁵

Against this expansive view of analogous art, the court went on to address the finding of obviousness. Given that Damark disclosed all claimed elements except for the gas spring, which itself is disclosed by Teague, all that remains is a “reason to combine” the two.²⁰⁶ The court found that Teague disclosed coil springs that were functionally equivalent to the claimed gas springs; and also disclosed the interchangeability of coil and gas springs generally.²⁰⁷ In the process of working through the functional comparison between the prior art and the claimed invention, the court realized that the same characteristic that placed Teague in the analogous art did most of the work in completing the obviousness analysis. It found that, “while perhaps not dispositive of the issue, the finding that Teague, by addressing a similar problem, provides analogous art to Icon’s application goes a long way towards demonstrating a reason to combine the two references.”²⁰⁸ This is a significant shortcut—if the same feature that places a reference properly within the prior art can do the work of providing a reason to combine, then all that is needed is to show the reference is applicable in the first place, effectively collapsing the *Graham* factor of determining the “scope and content of the prior art” with the *KSR* requirement of a “reason to combine.” In *Icon Health*, the art is applicable because it is “reasonably pertinent” to the problem addressed by the invention, but that is broadly defined and is only a relevant criterion because the art is not in the precise field of the invention. The court is again using a proxy—the fact that a reference satisfies the criteria for inclusion in analogous art—to provide a reason to combine and thus establish a *prima facie* case of obviousness. In other words, analogous art is presumptively combined for purposes of determining obviousness.

As in *Leapfrog*, the court in *Icon Health* needed to address rebuttal evidence. Icon argued that Teague “teaches away” from the claimed combination, based on alleged specific direction in Teague not to use dual-action springs, and the dual action springs disclosed in Teague would render Icon’s invention in-

²⁰⁵ *Id.* at 1380.

²⁰⁶ *See id.*

²⁰⁷ *Id.* at 1380–81. There are also a number of parallels drawn by the court between the overall functionality of the folding mechanisms in Teague and Icon. *See id.*

²⁰⁸ *Id.* at 1380.

operable.²⁰⁹ The court dismissed the first argument, as it was based on Icon's position regarding a feature of the invention that was not claimed: "Icon's argument may have carried some weight with more narrow claims, which it could have obtained by amendment. But faced with broad claims encompassing anything that assists in stably retaining the tread base, we reject Icon's argument."²¹⁰ The court also rejected the inoperability argument since the person of ordinary skill would have known to size components appropriately in the two different environments.²¹¹

A framework for analysis of obviousness emerges from *Leapfrog* and *Icon Health*. When all elements of a claimed invention are found in the prior art, the only remaining requirement is to provide a reason to combine these elements according to *KSR*. The court is no longer looking for an explicit "teaching, suggestion, or motivation" but instead seems willing to rely on a number of easy-to-find proxies for this "reason." In *Leapfrog*, the proxy is the existence of a common updating technique—"computerizing" an existing electro-mechanical device having the same functionality. In *Icon Health*, the proxy is the mere relevance of the art, i.e., its existence in the analogous prior art itself. Only after the prima facie case of obviousness is established through the proxy is any evidence of secondary considerations, teaching away, or the difficulty of making the claimed invention considered in response. Just as in the two Board opinions in *Smith* and *Catan*, this approach is essentially a "presumption of combinability"—once the elements are found in the analogous art, little more is required to combine them.

Other Federal Circuit cases since *KSR* follow a similar pattern. For example, in *In re Translogic Technology, Inc.*,²¹² an invention comprising a series multiplexer circuit using transmission gate multiplexer (TGM) elements was found obvious since a reference disclosing the overall circuit structure needed only to be updated with the well-known TGM circuit elements to achieve the claimed invention.²¹³ The opinion doesn't single out TGM's, it simply relies on the fact that they were one type of known multiplexers, and a person of ordinary

²⁰⁹ *In re Icon Health & Fitness, Inc.*, 496 F.3d 1374, 1381–82 (Fed. Cir. 2007).

²¹⁰ *Id.* at 1381.

²¹¹ *Id.* at 1382.

²¹² 504 F.3d 1249 (Fed. Cir. 2007).

²¹³ *See id.* at 1262 ("A person of ordinary skill in the art would have appreciated that any conventional multiplexer circuit could be utilized to implement the 2:1 multiplexer circuits in Gorai.").

skill would have recognized the value of using what is already known. The person of ordinary skill “would have been *able* to choose TGMs as an option.”²¹⁴

Similarly, in *In re Sullivan*,²¹⁵ the Federal Circuit accepted the Board’s finding of a *prima facie* case of obviousness for a treatment for snake bites. The Federal Circuit found that it was not unreasonable for a person of ordinary skill to conclude that if a particular whole antibody neutralizes one type of venom, then a fragment of that whole antibody, a “Fab fragment,” “might be used to neutralize the venom of another species.”²¹⁶ Evidence relating to whether or not the claimed use was in fact “reasonable,” i.e., that Fab fragments were generally not considered useful as antivenom, was appropriately considered for rebuttal purposes only.²¹⁷

1. The Special Case of Certain Inventions in the Chemical Arts

Not all Federal Circuit cases since *KSR* can be said to follow this pattern. Specifically, where the claimed invention is in the chemical arts, the analysis of obviousness has followed, and in some cases continues to follow, a different path.²¹⁸ The Federal Circuit bases this distinction on the “unpredictable” nature of innovation in the field, but it may also be a result of the fact that the method for evaluating an invention is somewhat different than in other fields.²¹⁹

²¹⁴ *Id.* at 1262 (emphasis added).

²¹⁵ 498 F.3d 1345 (Fed. Cir. 2007).

²¹⁶ *Id.* at 1351.

²¹⁷ *See id.* at 1352–53. Much of this evidence was presented in the form of declarations alleging teaching away and unexpected results. *See id.* This presentation may have influenced the analysis somewhat as such contentions are often presented in declaration form to rebut a *prima facie* case of obviousness, for example in a chemical case. *See, e.g.,* CHISUM, *supra* note 36, § 5.04[6][e]. Here, however, the Board reached the *prima facie* case resulting from combining art directed to Fab fragments for detecting toxin in immunoassays and art directed to using whole antibodies (as opposed to fragments) as antivenom, without providing an explicit reason to combine the two. *See Sullivan*, 498 F.3d at 1348–49. Note that while the Federal Circuit did not quibble with the establishment of a *prima facie* case, it did reverse and remand for the Board to consider rebuttal evidence. *See id.* at 1353.

²¹⁸ *See, e.g.,* Miles J. Sweet, Note, *The Patentability of Chiral Drugs Post-KSR: The More Things Change, the More They Stay the Same*, 24 BERKELEY TECH. L.J. 129, 140–41 (2009) (“[I]n response [to *KSR*], the Federal Circuit has seemingly established a framework for assessing nonobviousness of enantiomeric pharmaceutical products based on the unpredictability of their properties and success in the separation process itself, which does not mark a substantive departure from pre-*KSR* jurisprudence.”).

²¹⁹ *See, e.g.,* Eisai Co. v. Dr. Reddy’s Labs., Ltd., 533 F.3d 1353, 1359 (Fed. Cir. 2008).

In the electrical or mechanical arts, for example, an invention may often lend itself to an analysis of its parts—the invention can be viewed as a combination of elements in some sense.²²⁰ Chemical compounds are not properly so viewed—a compound is made up of individual atoms or ions or smaller compounds, all of which inevitably exist in the prior art. Perhaps it is not surprising, then, that to evaluate a new compound effectively, the Federal Circuit has established various special rules. For example, in chemical cases the court looks for a “lead compound” and requires “some reason that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed compound.”²²¹ This search for a leading reference is generally not found in obviousness jurisprudence outside of the chemical arts, and was not part of the Court’s approach in *KSR*.²²²

The disparity in treatment of inventions in the chemical arts has long been recognized and, as noted above, is often justified, particularly in the pharmaceutical and biotechnology fields, by the Federal Circuit’s view that the art is inherently unpredictable.²²³ When viewed from this perspective, it is not surprising that certain Federal Circuit cases since *KSR* do not appear to have altered this approach to chemical cases.²²⁴ As discussed in Part III.A, the analysis in

²²⁰ This does not mean that an invention in the mechanical or electrical arts is simply a sum of separate parts that may or may not have the same function, or a “synergistic” sum of known parts. Elements in any invention may interact and transform so as to make any attempt to break down the result into constituent parts nonsense. However, in general, a mechanical or electrical apparatus can be viewed as a system (whether complex or simple) that can be evaluated to some extent by looking at its constituent parts more easily than a composition of matter.

²²¹ See *Takeda Chem. Indus., LTD. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1357 (Fed. Cir. 2007).

²²² See, e.g., CHISUM, *supra* note 36, § 5.04; Jonathan A. Harris & Amy L. Kokoski, *Fed. Cir. Obviousness vs. SCOTUS Precedent*, LAW360, Aug. 20, 2009, <http://www.law360.com/articles/111054> (last visited Sept. 7, 2009).

²²³ See *Eisai*, 533 F.3d at 1359 (“To the extent an art is unpredictable, as the chemical arts often are, KSR’s focus on these ‘identified, predictable solutions’ may present a difficult hurdle because potential solutions are less likely to be genuinely predictable.”); see also Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155, 1157 (2002):

This implication is closely tied to the Federal Circuit’s designation of some technologies as belonging to the “unpredictable arts”; the court treats biotechnology as if the results obtained in that art are somehow outside the control of those of skill in the art, whereas computer science is treated as if those of skill in the art have their outcomes well in hand.

²²⁴ See, e.g., *Eisai*, 533 F.3d at 1356–57 (“Where, as here, the patent at issue claims a chemical compound, the analysis of the third Graham factor (the differences between the claimed in-

KSR is primarily focused on predictability so, at first blush, an art known for its inherent unpredictability might seem less susceptible to *KSR*'s higher standard. Care should be taken, however, not to oversimplify *KSR* and apply it only to fields deemed to be "predictable." The *KSR* Court advocated flexibility so that an invention would be analyzed on its merits, not according to an inflexible or categorical rule. Unpredictability can inform a case-by-case analysis of obviousness, but it does not make sense to use characterization of an entire field to simply ignore *KSR* and return to old case law, in particular where these old cases are based on a rejected test. *KSR* did not say that it only addressed the law of obviousness in predictable fields, or that the TSM test worked in unpredictable fields.²²⁵ The Court's rejection of a rigid approach to obviousness suggests that it would disapprove any such *a priori* determination of predictability of an entire field and the broad bias that would bring to the evaluation of obviousness. In addition, broad characterization of any field must inevitably change as new technologies emerge and scientists become more comfortable with existing ones, so the Federal Circuit must inevitably revisit the law of obviousness in the chemical arts as it is currently doing in the electrical and mechanical fields.

Despite the somewhat unique approach to inventions in this area, the mere fact that an invention is in the chemical arts has not prevented it from being subject to the shift in analysis contemplated in *KSR*. In at least one case to date, the Federal Circuit has taken pains to describe the universal applicability of *KSR* to all fields, including the chemical arts. In *In re Kubin*,²²⁶ the Federal Circuit affirmed the Board's finding of obviousness in the third of the trilogy of Board opinions released just after the *KSR* opinion.²²⁷ The court stated:

This court cannot, in the face of *KSR*, cling to formalistic rules for obviousness, customize its legal tests for specific scientific fields in ways that deem entire classes of prior art teachings irrelevant, or discount the significant abilities of artisans of ordinary skill in an advanced area of art. As this court's predecessor stated in *In re Papesch*, "[t]he problem of 'obviousness' under section 103 in determining the patentability of new and useful chemical compounds . . . is not really a problem in chemistry or pharmacology or in any

vention and the prior art) often turns on the structural similarities and differences between the claimed compound and the prior art compounds." (citing *Eli Lilly & Co. v. Zenith Goldline Pharms., Inc.*, 471 F.3d 1369, 1377 (Fed. Cir. 2006)). To the extent the chemical cases establish a retrenching of TSM, much of the potential benefit of the Court's decision in *KSR* could be lost, see *infra* Part IV.E.

²²⁵ It simply stated that a flexible test should apply. See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 415 (2007).

²²⁶ 561 F.3d 1351 (Fed. Cir. 2009).

²²⁷ *Id.* at 1361.

other related field of science such as biology, biochemistry, pharmacodynamics, ecology, or others yet to be conceived. It is a problem of patent law.”²²⁸

Following *Kubin*, if we assume that the law of obviousness should be applied without reference to any categorical characterization of a field as predictable,²²⁹ the question remains as to whether the unique structure of chemical inventions suggests a unique approach. While the *KSR* analysis may seem more relevant if the invention can be viewed as a combination of elements, if the focus is placed on the combination of the prior art, the universality of the analysis becomes much clearer. So for example, in *Kubin*, the invention was directed to “DNA that encodes the CD48-binding region of NAIL proteins”²³⁰ and the art was described by the court as involving “Valiante’s teaching of the NAIL protein, combined with Valiante’s/Sambrook’s teaching of a method to isolate the gene sequence that codes for NAIL.”²³¹ Such combination was found to result in obviousness of the claimed invention.²³² The fact that the Federal Circuit opinions do not always appear to apply the same approach may reflect a distinction between focusing on the claimed invention as a combination of elements as opposed to understanding the invention as potentially resulting from a combination of the prior art. The latter is a more principled and universal way to view the obviousness analysis, as evidenced by the opinion in *Kubin*.

2. The Framework of the Rebuttable Presumption of Combinability

In summary, the Federal Circuit’s post-*KSR* test for obviousness exhibits a characteristic framework. With the apparent exception in some instances of inventions in the chemical arts, the court is interpreting the broad criteria outlined in *KSR* to serve as a flexible pool of relatively easy-to-find proxies for the required “reason” to combine prior art elements.²³³ Where a reference meets the test for “analogous art” that finding “goes a long way” to providing the rea-

²²⁸ *Id.* at 1360–61 (citations omitted).

²²⁹ A result that will promote the advantages of the *KSR* test across the board. See *infra* Part IV.

²³⁰ *Kubin*, 561 F.3d at 1353.

²³¹ *Id.* at 1358 (emphasis added). This characterization of the invention as a “combination” of prior art references persists throughout the opinion: “Mathew’s quasi-agnostic stance toward the existence of a human homologue of the 2B4 gene cannot fairly be seen as dissuading one of ordinary skill in the art from combining Mathew’s teachings with those of Valiante.” *Id.* at 1357.

²³² See *In re Kubin*, 561 F.3d 1351, 1361 (Fed. Cir. 2009).

²³³ Of course these proxies may not always be easy to find, but the court seems to be looking for them in easy to find manifestations.

son to combine; and in fields where the benefits of “computerization” are widely known, the knowledge of these benefits itself provides the reason. In some cases, the reason is subsumed into the fact that a particular feature was “well-known” in the field.²³⁴ The Federal Circuit is using an analysis that calls for very little beyond the presence of the elements of an invention in the prior art to establish a *prima facie* case of obviousness. The reason can be found in features that are inevitable or nearly inevitable—possibly the features’ mere presence in the analogous art itself.²³⁵ Evidence of secondary considerations, such as commercial success, is relevant, but even strong evidence may not overcome the *prima facie* case such that the invention will still be found obvious as a matter of law.²³⁶

The Federal Circuit and the Board frequently cite evidence that would run counter to the *prima facie* case of obviousness, such as teaching away,²³⁷ unexpected results,²³⁸ and whether making the invention was within the abilities of the person of ordinary skill,²³⁹ even when the applicant or patentee fails to provide such evidence. In other words, the Federal Circuit and the Board are providing guidance to patentees and applicants regarding evidence that is persuasive to prove that an invention is nonobvious, or “rebut” the presumptive combinability of art that results in a *prima facie* case.

There are other important aspects emerging in this new framework. First, following the Court’s lead in *KSR*, the focus is on the claims, not statements of problems to be solved or other special features or preferred embodiments.²⁴⁰ While this seems intuitive, the Federal Circuit’s rigid application of the TSM test had taken focus away from the claims.²⁴¹ The Board and the Federal Circuit have followed this lead and refocused the obviousness inquiry on the claims.²⁴² Accordingly, a patentee cannot argue that a claimed circuit is

²³⁴ See *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1262 (Fed. Cir. 2007) (finding an invention obvious because it incorporated well known elements the benefit of which would have been obvious to one skilled in the art); see also *In re Trans Texas Holding Corp.*, 498 F.3d 1290, 1301 (Fed. Cir. 2007) (finding it obvious to combine indexed loan accounts with the “well-known practice of offering loans secured by mortgaged real estate”).

²³⁵ See *In re Icon Health & Fitness, Inc.*, 496 F.3d 1374, 1380 (Fed. Cir. 2007).

²³⁶ See *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1163 (Fed. Cir. 2007).

²³⁷ See *Icon Health*, 496 F.3d at 1381.

²³⁸ See *In re Sullivan*, 498 F.3d 1345, 1351 (Fed. Cir. 2007).

²³⁹ See *Leapfrog*, 485 F.3d at 1162.

²⁴⁰ See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419–20 (2007).

²⁴¹ See *id.* at 419–21.

²⁴² See *In re Catan*, 83 U.S.P.Q.2d (BNA) 1569, 1574 (B.P.A.I. 2007) (rejecting appellants’ argument that a claim should be limited to a “‘local’ processor” to overcome an obviousness

novel based on unclaimed functionality,²⁴³ nor can an applicant argue that prior art is irrelevant based on limitations not found in a claim.²⁴⁴ Additionally, secondary considerations are relevant only where a close nexus to the claims is shown.²⁴⁵ Second, the Federal Circuit's interpretation of the scope of art applicable to the determination of obviousness, i.e., the analogous art, is linked to the claim, and understood broadly in that context. This is consistent with the Court's reasoning in *KSR*, which connects work in related fields: "familiar items may have obvious uses beyond their primary purposes,"²⁴⁶ and "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one."²⁴⁷ Thus, the Federal Circuit's application of a presumption of combinability for a broad range of analogous art, while appropriately linked to the claimed invention, would appear to place a real burden on applicants and patentees, one that can only be overcome by proving that the person of ordinary skill would not or could not have made the combination.

As argued further below in Part IV, there are significant advantages to the framework emerging from the Federal Circuit's obviousness cases.²⁴⁸ The

rejection where the claim could not be so limited in light of the description in the specification); *see also* *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008); *In re Translogic Tech., Inc.*, 504 F.3d 1249 (Fed. Cir. 2007); *In re Icon Health & Fitness, Inc.*, 496 F.3d 1374 (Fed. Cir. 2007).

²⁴³ *See Translogic*, 504 F.3d at 1261 (rejecting patentee's argument that the character of the inputs to the claimed multiplexer circuit were not found in the prior art where the claim was not limited to any particular inputs).

²⁴⁴ *See Icon Health*, 496 F.3d at 1381.

²⁴⁵ *See Muniauction*, 532 F.3d at 1328 n.4 ("We further note that our conclusion as to the nexus between this award and the claims is consistent with the long-established rule that '[c]laims which are broad enough to read on obvious subject matter are unpatentable even though they also read on nonobvious subject matter.'" (quoting *In re Lintner*, 458 F.2d 1013, 1015 (C.C.P.A. 1972))).

²⁴⁶ *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007).

²⁴⁷ *Id.* at 417.

²⁴⁸ The rebuttable presumption of combinability the Federal Circuit and the Board are applying reflects the model proposed by IBM in its amicus brief to the Supreme Court in *KSR*. For example, IBM proposed a test where:

- (1) references found in the analogous art are presumptively combinable;
- (2) applicants can narrow the scope of a claim during prosecution to limit the applicable (analogous) art;
- (3) evidence relevant to a lack of motivation (such as a teaching away) can rebut the presumption; and

burden arising from the presumption of combinability is one that patent applicants and patentees are in the best position to bear, and one which balances incentives well. If applied properly in examination, this new test could lead to the development of improved public records in patent prosecution that will enhance the public notice function of the patent. If applied properly in litigation with an

-
- (4) secondary considerations are relevant to the overall conclusion of obviousness, and are also available for rebuttal where relevant to whether the person of ordinary skill would have combined the references.

See IBM Amicus Brief, *supra* note 21, 6–7.

Others have proposed the use of presumptions in analyzing obviousness in the context of the *KSR* case. However, these authors propose a narrower framework than that proposed here. See Joseph Scott Miller, *Remixing Obviousness*, 16 TEX. INTEL. PROP. L.J. 237, 254 (2008) (arguing for a presumption applicable to combination inventions); Timothy R. Holbrook, *Obviousness in Patent Law and the Motivation to Combine: A Presumption-Based Approach*, WASH. U. L.R. (SLIP OP.), Mar. 21, 2007, <http://lawreview.wustl.edu/slip-opinions/obviousness-in-patent-law-and-the-motivation-to-combine-a-presumption-based-approach/> (last visited Jan. 16, 2010) (suggesting a framework where a presumption in favor of obviousness arises from evidence of a motivation to combine, and a presumption of non-obviousness from evidence of a teaching away. Where neither type of evidence is present, the *Graham* framework applies without any additional presumption.

Another author has observed that the analysis in *KSR* indicates the establishment of legal rules to shift the burden of production and persuasion to the patentee, at least for “combination inventions,” resulting in some instances in an effectively un rebuttable presumption of obviousness. See Sarnoff, *supra* note 116, at 1029. Such legal rules would lead to limiting relevant evidence. See *id.* at 1026. While this author entirely agrees that the Court is providing guidance in the form of legal rules (or encouraging the establishment of legal rules) for determining nonobviousness (see *infra* Part IV.D), this author further concludes that this, in addition to burden-shifting, will create a more robust public record both at the patent office and in courts, where currently so little regarding the obviousness analysis is captured on the record. In addition, as discussed above, the cases applying *KSR* appear to be applying a rebuttable presumption, and in some instances to be viewing the exercise as one of combining art, not evaluating a claim as a “combination,” and thus not limiting the analysis to any particular form of invention. See, e.g., *Ortho-McNeil Pharm., Inc. v. Teva Pharms. Indus., Ltd.*, No. 2008-1549, 2009 U.S. App. LEXIS 19325, at *8–10 (Fed. Cir. Aug. 26, 2009) (nonprecedential) (finding a material issue of fact and vacating summary judgment of obviousness where expert testimony indicated such factors as unexpected results and teaching away regarding an invention to a combination of two known ingredients, tramadol and acetaminophen). This approach should have the advantageous effect of fully exploring the merits of the invention from both the patentee/applicant and challenger/examiner viewpoints, on the public record, in as broad an array of cases as possible.

This author believes that a uniform approach, universally applying the rebuttable presumption of combinability, achieves the goals of generating a better public record during examination and litigation, and developing clarity in the law of obviousness (as discussed further *infra* Part IV), as well as maintaining a unitary patent system.

emphasis on its legal, as opposed to factual, aspects it could improve the judicial records of obviousness determinations and thus contribute to the development of a body of law that will enhance predictability as to the scope and validity of a patent.

IV. A REBUTTABLE PRESUMPTION OF COMBINABILITY SUPPORTS DEVELOPMENT OF A PUBLIC RECORD

Application of a presumption for combining prior art should have positive consequences for patent quality by crediting the skill of the PHOSITA, and should promote establishment of an appropriate record during patent prosecution. In addition, a key element of the *KSR* decision is that it should refocus courts' attention on the legal aspect of the obviousness question. This refocusing should create more complete and accurate records from courts analyzing patent validity. In turn, these records will result in guidelines that the public and PTO can apply, leading to predictability.

The rebuttable "presumption of combinability" test the Federal Circuit and the PTO are applying in the wake of *KSR* could serve as a lever to drive reforms in patent examination and litigation that would improve patent quality over time.²⁴⁹ Application of this test could establish guidance, insight, and analytic techniques that would drive predictability and certainty in evaluating obviousness. If, on the other hand, the test for obviousness quickly devolves into one that returns to the practice of placing too high a burden on examiners to prove obviousness, there will be little motivation or mechanism for the creation of useful public records during prosecution. Likewise, if the test for obviousness returns, contrary to the Court's guidance, to effectively a pure issue of fact for juries to decide in the context of patent infringement litigation, then there will be little opportunity for the development of guidance from the courts.

A. *Establishing a Public Record*

A presumption of combinability test reallocates the burden of proof in patent examination in a way that could lead to the establishment of better public records, enhancing the important public notice function of the patent.²⁵⁰ Under the old TSM test, examiners were often forced to find an explicit teaching in the

²⁴⁹ For the first statement of the advantages of such an approach, see IBM Amicus Brief, *supra* note 21, at 26–30 (discussing advantages of this approach, including ease of application, promotion of clarity in the patent process, and inherent fairness).

²⁵⁰ See *supra* note 21 and accompanying text.

prior art providing directions to combine references.²⁵¹ As noted *supra* in Part II.B, placing this burden initially on examiners is unlikely to result in proper rejection of obvious claims given limited time and resources.²⁵² In addition, in many fields such explicit teachings are unlikely to exist, even where a combination would be trivial.²⁵³ If elements found in the prior art are presumed combinable, then once such elements are found by the examiner the burden shifts to the applicant to indicate why those references should not be combined, or that the references themselves are not properly within the prior art.²⁵⁴ The applicant can also amend the claims to add a limitation not found in the art or to narrow the field such that certain references are no longer analogous or relevant. In any event, applying the presumption substantially increases the likelihood that applicants must make substantive distinguishing arguments regarding patentability since they cannot take advantage of the burden on the examiner to find explicit teachings under the old TSM test.

The applicant needs to make such arguments “on the record”; in official communications with the patent office that become part of the record of patent examination (the “file wrapper”). These statements are binding on the applicant with respect to the scope of claim coverage in the issued patent. In *Phillips v. AWH Corp.*,²⁵⁵ the court clarified that the intrinsic record of patent prosecution, including the file wrapper or prosecution history, is of paramount importance in interpreting the meaning of claims.²⁵⁶ And in *KSR*, the Court has reminded us that the obviousness analysis must be linked to what is claimed, not what is otherwise disclosed in the specification.²⁵⁷ Therefore, in responding to the examiner’s obviousness rejection, the applicant must consider the impact of statements made on the record to the issue of obviousness as well as to the possible narrowing effects of these statements on claim meaning and resulting scope of coverage. The applicant may avoid obviousness by explaining how the invention

²⁵¹ See *supra* note 45 and accompanying text; see also *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–19 (2007).

²⁵² See *supra* notes 53–60 and accompanying text. The TSM test also suffered from problems of collapsing the tests for novelty and nonobviousness and failing to give life to the ordinary skill of the PHOSITA. See *supra* text accompanying notes 49–53.

²⁵³ See *supra* notes 44–48 and accompanying text.

²⁵⁴ The burden is traditionally on the examiner or challenger to show that the references are within the prior art. There is no indication in the cases reviewed by the author that this has changed. However, the scope of analogous art should be read broadly against the claims. See *In re Icon Health & Fitness, Inc.*, 496 F.3d 1374, 1379–80 (Fed. Cir. 2007).

²⁵⁵ 415 F.3d 1303 (Fed. Cir. 2005).

²⁵⁶ See *id.* at 1313–14.

²⁵⁷ See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007).

differs from the prior art, but such distinguishing features cannot later be omitted from a fair reading of the claim to include within its scope a product accused of infringement.

Thus, the applicant will have to weigh the effect of statements made on the record during prosecution for obviousness purposes—for which a narrower claim scope is beneficial—against that for infringement purposes—for which a broader claim scope is beneficial. The applicant is in the best position to do this given presumed familiarity with the field and the invention, but more importantly because the patentee has reason to balance these issues, to achieve as broad coverage as possible, but only for claims that will be found nonobvious. While applicants had the opportunity under the TSM test to balance validity and infringement during prosecution, the burden of finding a “teaching, suggestion, or motivation” to combine references always remained with the examiner. Applicants only needed to refute the examiner’s finding to overcome an obviousness rejection, an affirmative explanation of why the invention was nonobvious was not required. The presumption of combinability makes it much more likely that an examiner will be able to maintain an obviousness rejection, and therefore that applicants will need to provide additional detail regarding claim scope and meaning to overcome such rejections. The result is a better record of patent prosecution that the public, courts, and accused infringers can rely on in interpreting claims.

Reliance on prosecution history for help in evaluating obviousness is nothing new. In *Graham*, the Court paid particular attention to how the inventor described the invention and distinguished it over prior art during the application process. The patentee argued in court that the distinguishing feature of the inventive combination was its flexibility, but in response the Court remarked that “Graham did not urge before the Patent Office the greater ‘flexing’ qualities of the ’798 patent arrangement which he so heavily relied on in the courts.”²⁵⁸ Instead, the patentee had amended claims and argued in response to a rejection that “wear was reduced.”²⁵⁹ Ultimately, the fact that the “flexing” argument was raised first on appeal and never “raised in the Patent Office” helped persuade the Court that the invention was obvious.²⁶⁰

²⁵⁸ *Graham v. John Deere Co.*, 383 U.S. 1, 23 (1966).

²⁵⁹ The patentee also emphasized new features: “the bolt used to connect the hinge plate and shank maintained the upper face of the shank in continuing and constant contact with the underface of the hinge plate.” *Id.*

²⁶⁰ *Id.* at 25.

B. The Presumption Helps Achieve the Right Standard

Application of the presumption also addresses problems associated with the low standard for patentability under the TSM test. The obviousness of an invention is judged from the perspective of the person having ordinary skill in the art.²⁶¹ In order to reflect the state of the art properly, this hypothetical person is imbued with knowledge of the entire scope of art pertinent to the obviousness inquiry.²⁶² The presumption of combinability gives weight to the knowledge, skill, and ordinary creativity of the person of ordinary skill by initially presuming nothing more than that person would try to put together the art of which he is aware.²⁶³ The presumption thus firmly distinguishes the test for obviousness from that for novelty, dispensing with any requirement to find an explicit teaching to combine prior art references. The application of a presumption does not necessarily lead to any unfairness to the patentee. It simply *begins* a dialog in prosecution and litigation after the examiner or challenger finds all elements of an invention in the prior art. The applicant or patentee must then make arguments to distinguish the invention over the prior art, instead of having the entire analysis of obviousness hinge in the first instance on finding an explicit teaching that is often very hard to uncover and not dispositive of the issue.

C. Applying the Framework Established by the Presumption

The Federal Circuit and Board opinions applying the presumption of combinability have sketched a framework for applicants and patentees to argue nonobviousness and overcome the presumption. Given that most of these early cases find against the patentee,²⁶⁴ guidance can often be found in the negative, i.e., in what manner the patentee failed to present the proof required to overcome the presumption. For example, in some cases the applicant or patentee made an argument that was based on distinguishing features not found in the

²⁶¹ 35 U.S.C. § 103 (2006).

²⁶² See *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.”).

²⁶³ See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

²⁶⁴ At the time of this writing, many of the cases heard by the Federal Circuit involving obviousness determinations had been tried at the lower court under the old TSM standard, which explains at least in part why the results are weighed against patentees—without knowing the new standard, pertinent evidence was unlikely to have been presented at trial or in the PTO.

claims, prompting the court or appeals board to make the relatively straightforward point that whatever is unique about the invention must be claimed.²⁶⁵ Other arguments, taken from the *KSR* opinion that itself was citing Court precedent, appear frequently: whether the combination was “beyond the skill” of the PHOSITA, whether there was a “teaching away,” and/or whether “unexpected results” were achieved.²⁶⁶ These can be understood as counterpoints to *KSR*’s overall theme of “predictability,” suggesting that patentees could use the statements of what would be obvious in *KSR* as templates for constructing arguments of nonobviousness. For example, where *KSR* suggests that known elements combined according to known methods to achieve predictable results is obvious, a patentee can show that the way the elements are combined was not known or would not have been used by one of ordinary skill, or that the functionality of an element or the combination was not predictable.²⁶⁷

The reasoning of *KSR* also creates a framework for patent applicants to draft applications with an eye toward anticipating arguments of nonobviousness that will persuade patent examiners. For example, the applicant could describe failed attempts to combine prior art to show that the combination was beyond the skill of the ordinary artisan, or could present evidence of unexpected results. Any relevant secondary considerations are also pertinent to the overall conclusion of obviousness, although the Federal Circuit has made clear that there must be a strong nexus between such factors and the claim(s) at issue, and even strong evidence may not overcome the conclusion of obviousness.²⁶⁸

²⁶⁵ See *supra* notes 240–247 and accompanying text.

²⁶⁶ See *supra* text accompanying notes 237–239. As the cases never explicitly discuss a presumption, it is not always clear if these “counterpoints” are being considered with respect to whether references should be combined or the overall conclusion of obviousness, but it is clear that they are related to the technical merits of the invention and thus not, strictly speaking, secondary considerations.

²⁶⁷ Similarly, where a challenge is based on the simple substitution of one known element for another to obtain predictable results, the patentee/applicant could argue that the substitution is inappropriate. See *Commonwealth Sci. & Indus. Research Org. v. Buffalo Tech. (USA)*, No. 6:06-CV-324, 2006 U.S. Dist. LEXIS 82834, at *31 n.13 (E.D. Tex. Nov. 13, 2006) (“Wilkinson would seem to suggest to one skilled in the art that OFDM can be used in substitution for FHSS (i.e., in the arrangement disclosed in Saleh) to obtain increased information rates in a WLAN, but the record does not contain any evidence to that effect.”). Alternatively, a patentee could rebut the contention that a known technique was used to improve a similar device in the same way by showing that for a different device (such as the subject of the invention) this improvement would not have been done the same way.

²⁶⁸ See *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 n.4 (Fed. Cir. 2008).

Many of the factors noted above appeared in Federal Circuit and Supreme Court cases prior to *KSR*,²⁶⁹ but were pertinent under the old TSM test only after the examiner or infringer had found the positive proof to combine references.²⁷⁰ The important distinction under the new presumption of combinability test is that less proof is required to prompt the applicant to discuss such issues on the record of patent prosecution. Thus, the potentially rich discussion of characteristics of the invention and how they are distinguished from the prior art would have been far less likely to appear.

D. *The Ultimate Conclusion of Obviousness Is an Issue of Law*²⁷¹

Another important feature of the new framework is its “legal” character. The Court’s opinion contains a number of different “scenarios” for proving ob-

²⁶⁹ See, e.g., *United States v. Adams*, 383 U.S. 39, 51–52 (1966):

We conclude the Adams battery was also nonobvious. As we have seen, the operating characteristics of the Adams battery have been shown to have been unexpected and to have far surpassed then-existing wet batteries. Despite the fact that each of the elements of the Adams battery was well known in the prior art, to combine them as did Adams required that a person reasonably skilled in the prior art must ignore that (1) batteries which continued to operate on an open circuit and which heated in normal use were not practical; and (2) water-activated batteries were successful only when combined with electrolytes detrimental to the use of magnesium. These long-accepted factors, when taken together, would, we believe, deter any investigation into such a combination as is used by Adams. This is not to say that one who merely finds new uses for old inventions by shutting his eyes to their prior disadvantages thereby discovers a patentable innovation. We do say, however, that known disadvantages in old devices which would naturally discourage the search for new inventions may be taken into account in determining obviousness.

²⁷⁰ See *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).

²⁷¹ See *Kinetic Concepts, Inc. v. Blue Sky Med. Group, Inc.*, 554 F.3d 1010 (Fed. Cir. 2009), cert. denied, 130 S.Ct. 624 (2009), where the question presented was: “Whether a person accused of patent infringement has a right to independent judicial, as distinct from lay jury, determination of whether an asserted patent claim satisfies that [the non-obvious subject matter] condition for patentability.” Petition For a Writ of Certiorari at 2, *Kinetic Concepts, Inc. v. Blue Sky Medical Group, Inc.*, 554 F.3d 1010, (No. 2007-1340, 1341, 1342), 2009 WL 2509227. The petition argued that the Federal Circuit rule allowing the jury to make binding decisions on the issue of obviousness is contrary to Supreme Court precedent and precludes the explicit findings required by *KSR*. See, e.g., *id.* at 12 (arguing that “it is impossible to know what process of reasoning led to [the legal conclusion of nonobviousness] or to review the correctness of that reasoning.”). If the petitioner’s position were ever adopted, the result would require courts to “explicitly” analyze obviousness on the record, thus promoting the development of clear guidance, an analysis advocated *infra* in this section.

viousness—represented fairly well by the PTO Examination Guidelines discussed *supra*, Part III.A. The *KSR* Court also admonished the lower courts to recognize the legal aspects of the obviousness inquiry, and retrieve some of the burden that had been shouldered by juries under the guise of the factual question of whether there was a teaching, suggestion, or motivation to combine references.²⁷² The line demarcating the legal aspect of the obviousness inquiry should therefore be drawn to encompass more of the analysis, and the bundle of malleable rules the Court described are the blueprint for doing so. If the parties address these rules explicitly, e.g., in summary judgment motions, then trial judges will need to evaluate obviousness in a reviewable record based on a more substantive analysis than that provided by the old TSM test. Given the apparent bias of juries towards patentees (noted *supra* Part II.C), accused infringers should be motivated to raise such issues before the court whenever possible.²⁷³ If courts consistently shoulder the burden of legal analysis, then the “bundle of rules” of *KSR* could lead to a body of rich substantive analysis by trial judges. Even where the issues of fact are decided by a jury, the *KSR* scenarios could be used to craft special verdict forms, though it would be preferable if they were used to unambiguously define a new broader territory of legal analysis relevant to obviousness.²⁷⁴ Over time, rules and guidelines would emerge to help patentees and the public determine whether patents are valid, providing needed certainty of what is and is not in the public domain.

The *Graham* inquiries underlying the determination of obviousness, such as the scope and content of the prior art and the level of ordinary skill, are issues of fact.²⁷⁵ Relegating the last step of the inquiry—encompassing the im-

²⁷² See *In re Kahn*, 441 F.3d 977, 985 (Fed. Cir. 2006) (“We review the Board’s ultimate determination of obviousness de novo. However, we review the Board’s underlying factual findings, including a finding of a motivation to combine, for substantial evidence.”) (citations omitted).

²⁷³ See *Dabney*, *supra* note 14, at 165. See also *Sarnoff*, *supra* note 116, at 1040 (“*KSR* suggests that the policy discretion remaining in the legal conclusion of obviousness would have permitted the judiciary to privilege therapeutic properties over other properties when determining whether the inventive contribution warrants the grant of a patent.”) (footnote omitted).

²⁷⁴ The author does not suggest that obviousness would ever lend itself to analysis as a pure issue of law such as claim construction, nor should it. The *Graham* inquiries such as the scope and content of the prior art and the level of skill are certainly factual issues, but the determination of obviousness against this factual background can appropriately be viewed as a legal question.

²⁷⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966):

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,

portant substantive analysis of whether the invention as a whole is obvious in view of the prior art—to the jury under the TSM test seems particularly problematic. If the jury can decide this issue without any record of analysis, there is no guidance created on how to actually compare a collection of references with the invention at issue. The parties simply present evidence of teaching, suggestion, or motivation as a factual issue, and wait for a simple yes/no from the jury as to the ultimate issue. It is thus impossible to predict how a court or jury would evaluate the obviousness of an invention in light of new, or even previously considered,²⁷⁶ prior art—there is simply no framework of analysis available.

If, on the other hand, courts follow the *KSR* Court's admonition to recognize more directly the legal nature of the obviousness inquiry, either through summary judgment or by performing part of the analysis at trial as a legal question, then a record will be created covering the most critical aspect of the obviousness analysis: the comparison of the invention to the prior art. The presumption of combinability test provides an excellent framework for this. Under this test, the various "rules" described in *KSR* are applied in a way that places an initial burden on the patentee, just as in prosecution, to articulate differences between the prior art being applied and the invention. The patentee will have similar motivations as the applicant during prosecution, although arguably more focused in that any statements made regarding differences between the prior art and the invention that define the scope of the patent claims will also limit claim

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.

Id. (citations omitted).

²⁷⁶ The Court in *KSR* suggested that the presumption of validity given to issued patents might be affected by whether or not art was considered by the patent office during examination:

We need not reach the question whether the failure to disclose Asano during the prosecution of Engelgau voids the presumption of validity given to issued patents, for claim 4 is obvious despite the presumption. We nevertheless think it appropriate to note that the rationale underlying the presumption—that the PTO, in its expertise, has approved the claim—seems much diminished here.

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 426 (2007). The issue of whether the presumption is or should be affected by the consideration (or lack thereof) of art by the patent office is beyond the scope of this article, but has attracted a great deal of attention from scholars and litigants, as it is an important aspect of the overall analysis of validity of issued patents. See, e.g., *z4 Techs., Inc. v. Microsoft Corp.*, 507 F.3d 1340, 1354 (Fed. Cir. 2007); see also Sarnoff, *supra* note 116, at 1007–10.

coverage for purposes of the very specific infringement contention at issue in the case. The overall statutory presumption of validity would nevertheless apply, since the presumption of combinability is an intermediate step specific to the combination of references when all elements of an invention are found in the prior art, and so its application should only serve as a mechanism to start the dialog on obviousness.²⁷⁷ The result should be a robust analysis of obviousness at the district court level, and over time patentees and the public will have the benefit of rules and ways of applying them to applications and issued patents resulting in improved certainty in the scope and validity of issued patents. The same patentees who enforce patents will be highly motivated to make sound arguments for patentability and to ensure that claim coverage is adequate. Ultimately, any judge that has had to make such evaluation will learn from it, not only about the technology but also how to perform the obviousness analysis, as will other judges reading or relying on the opinion.

There are certain drawbacks to this approach. First, the guidance the Court provided in *KSR* is somewhat amorphous. There are seven “rationales” that the PTO recognized in its Examination Guidelines. These different “subtests” clearly overlap, as the case citations in the PTO Examination Guidelines evidence—for example, *Dann v. Johnston*,²⁷⁸ is cited under rationales D (Applying a Known Technique to a Known Device (Method, or Product) Ready for Improvement To Yield Predictable Results) and F (Known Work in One Field of Endeavor May Prompt Variations of it for Use in Either the Same Field or a Different One Based on Design Incentives or Other Market Forces if The Variations Would Have Been Predictable to One of Ordinary Skill in the Art).²⁷⁹ It may therefore be unclear to an examiner or a court, or a patentee or infringer for that matter, which one—or ones—to apply. In addition, the Court did not prescribe a rebuttable “presumption of combinability”—this is simply the way the courts and the PTO appear to be applying *KSR* in many cases, in order to help focus the inquiry and raise the standard for patentability in a repeatable and clear fashion.²⁸⁰

The challenge for the courts, then, is two-fold: to follow the overriding theme of *KSR* and “raise the bar” by applying a tougher test for patentability, while at the same time performing enough analysis on the record to give life to the legal nature of the obviousness inquiry and create a body of law that can be followed in determining obviousness. The rebuttable presumption of combina-

²⁷⁷ See *supra* note 132.

²⁷⁸ 425 U.S. 219 (1976).

²⁷⁹ PTO Examination Guidelines, *supra* note 129, at 57,531, 57,533.

²⁸⁰ *Cf.* certain cases in the chemical arts. See *supra* notes 218–232 and accompanying text.

bility provides a vehicle to address these challenges. Over the long term, the law is likely to evolve as a function of time and technology, and as courts explore the challenge of evaluating the fundamental aspects of obviousness of an invention on the record.

E. Inconsistencies in the Chemical Arts

Already the Federal Circuit, while applying the presumption of combinability approach consistently in the electrical and mechanical arts, has shown some reluctance to change its approach in the chemical arts.²⁸¹ Based in part on the justification that certain fields are inherently “unpredictable,” the Federal Circuit has applied pre-*KSR* obviousness precedent to such inventions, relying on a somewhat indirect observation in *KSR*:

We note the Court of Appeals has since elaborated a broader conception of the TSM test than was applied in the instant matter. Those decisions, of course, are not now before us and do not correct the errors of law made by the Court of Appeals in this case. The extent to which they may describe an analysis more consistent with our earlier precedents and our decision here is a matter for the Court of Appeals to consider in its future cases. What we hold is that the fundamental misunderstandings identified above led the Court of Appeals in this case to apply a test inconsistent with our patent law decisions.²⁸²

The Court was not endorsing the Federal Circuit’s prior application of the TSM test, but instead simply suggesting that some prior cases may describe “an analysis more consistent with . . . our decision here.”²⁸³ The danger is that the Federal Circuit will read whole categories of pre-*KSR* cases as consistent with *KSR*, whether or not such cases truly apply a “flexible” test for obviousness. The fact that the Federal Circuit is citing the field of the invention as justification for applying pre-*KSR* precedent is already problematic, since the *KSR* Court was mandating the application of a flexible rule, not the piecemeal application of flexibility to arts that are, in the lay opinion of the court, more predictable than others. The Federal Circuit’s statement in the recent *Eisai Co. v. Dr. Reddy’s Laboratories, Ltd.*²⁸⁴ case evidences this subject matter approach: “To the extent an art is unpredictable, as the chemical arts often are, *KSR*’s focus on these ‘identified, predictable solutions’ may present a difficult hurdle because poten-

²⁸¹ See *supra* notes 218–232 and accompanying text.

²⁸² *KSR*, 550 U.S. at 421–22 (citations omitted).

²⁸³ *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421–22 (2007).

²⁸⁴ 533 F.3d 1353 (Fed. Cir. 2008).

tial solutions are less likely to be genuinely predictable.”²⁸⁵ This statement was followed by an analysis peculiar to chemical compounds.²⁸⁶

Application of categorical rules without focus on specific facts risks a return to pre-*KSR* precedent and analysis in broad subject matter areas—an exception that threatens to swallow the rule of *KSR*.²⁸⁷ While many of the precedents in the chemical arts that the Federal Circuit applies may use a flexible analysis, there is certainly no guarantee that will always be the case, and in any event the filter is wrong.²⁸⁸ If entire bodies of pre-*KSR* precedent can be applied so long as an invention is understood to be in an “unpredictable” area, then there is nothing to encourage the creation of better public records during prosecution and adjudication in areas where such transparency is perhaps most needed. This result would also hamper the mechanism the Court created for ensuring that a higher standard was being applied for patentability.

V. CONCLUSION

The *KSR* decision recognized a fundamental problem, that the test for obviousness applied by the Federal Circuit did not apply a high enough standard for weeding out unmeritorious inventions. By doing so, the opinion provides an opportunity for improving patent quality by giving examiners and accused infringers the tools to challenge applicants and patentees, respectively, to explain

²⁸⁵ See *Eisai Co. v. Dr. Reddy’s Labs., Ltd.*, 533 F.3d 1353, 1359 (Fed. Cir. 2008). The issue is one of degree—if the field of the invention is judged so broadly that its characterization as “chemical” is sufficient to deem it “unpredictable” and therefore likely to be found nonobvious, that is overbroad. If unpredictability is judged on a narrower level, i.e., with respect to techniques used to adapt a prior art system to a new technology, then that makes sense as a relevant factor to be considered, but this is a much more focused inquiry directed to the invention at issue in the case. The question of what may or may not have been predictable to a person of ordinary skill is inherently fact-based and time-dependent and must therefore be judged on a case-by-case basis. See, e.g., *In re Kubin*, 561 F.3d 1351, 1360 (Fed. Cir. 2009) (“[T]his record shows that one of skill in this advanced art would find these claimed ‘results’ profoundly ‘predictable.’”).

²⁸⁶ See *Eisai*, 533 F.3d at 1359 (“In other words, post-*KSR*, a prima facie case of obviousness for a chemical compound still, in general, begins with the reasoned identification of a lead compound.”).

²⁸⁷ See Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1037–38 (2003).

²⁸⁸ The principles set forth in *KSR* apply uniformly to all subject matter areas, consistent with the unitary nature of our patent system. See discussion of *In re Kubin*, *supra* text accompanying notes 226–232. Using a unitary approach, the PHOSITA embodies information regarding the skill and knowledge applicable to the field of invention such that the right standard is applied on a case-by-case basis.

the features of their invention that distinguish it over the prior art. The presumption of combinability currently applied by the PTO and the Federal Circuit in many cases is an excellent vehicle for creating this dialog of patentability. The inventor who is most familiar with the invention will need to balance the desire to narrow the scope of the invention for purposes of avoiding obviousness problems before and after issuance with the desire to obtain broad coverage for infringement. Such dialog will occur on the record of patent prosecution, and inform the patentee's and the public's understanding of the scope and validity of the patent. Likewise, the patentee will perform the same informed balancing in court, and will create, with the help of the trial judge and the accused infringer, a public record of analysis of obviousness.

KSR's admonition to the lower courts to give more weight to the legal aspect of the obviousness inquiry should also have the beneficial effect of creating records of analysis of obviousness, even where a patent case is tried to a jury. Rather than conclusory verdicts that the Federal Circuit must use appellate constructs to interpret, trial courts will need to conduct important aspects of the obviousness inquiry as a matter of law, in particular where the parties present their arguments to focus on legal issues.²⁸⁹ The structure of the obviousness inquiry makes this particularly compelling: the underlying factual issues, e.g., the level of ordinary skill, the scope and content of the prior art, and the differences between the prior art and the patented invention, may be tried to a jury. In many instances, however, it is the analysis of obviousness in light of these facts that is the critical step, and that is precisely the analysis at issue in *KSR* where the Court held it was appropriate for the district court's well-reasoned summary judgment ruling.

Enhancement of patent prosecution, more complete public records of examination, and a higher level of scrutiny keyed on the skill of the ordinary

²⁸⁹ See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 427 (2007) (finding summary judgment appropriate where significant factual issues were not in dispute, emphasizing the legal nature of the ultimate determination of obviousness). Enabling decisions on summary judgment requires the parties to address and support the legal aspects of the obviousness determination before trial. While it is likely too soon after the *KSR* decision to reliably evaluate statistical trends, early anecdotal evidence indicates that summary judgment on the issue of obviousness has been granted across various subject matter areas including electrical, mechanical, and pharmaceutical arts, and in various jurisdictions. See Jonathan B. Tropp & Cecilia Zhang Stiber, *Considering Summary Judgment After KSR*, LAW360, Aug. 25, 2009, <http://ip.law360.com/articles/109383> (last visited September 14, 2009) (“[T]rial court decisions—at least from districts where Day Pitney maintains offices, including New York, New Jersey, Connecticut and Massachusetts—suggest that, at least at the lower court level, even pharmaceutical competitors have successfully been challenging patent validity at the summary judgment stage based on *KSR*.”).

artisan should improve patent quality overall; and through a more complete dialog and analysis on the trial record, or through summary judgment, an increasing body of jurisprudence can be created to help analyze the obviousness issue. It is important that the PTO and the courts continue to apply the guidance of *KSR*, through the vehicle of the presumption of combinability and by treating a significant part of the obviousness inquiry as a question of law, such that these improvements can be realized.