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PRESERVING THE PRESUMPTION OF PATENT VALIDITY: AN ALTERNATIVE TO OUTSOURCING THE U.S. PATENT EXAMINER’S PRIOR ART SEARCH

John A. Jeffery*

The United States Patent & Trademark Office (USPTO) performs a rigorous examination before issuing each patent.¹ During this process, USPTO patent examiners analyze the claimed subject matter of the invention, determine the scope and content of the prior art, and ultimately decide whether the claimed invention is patentable.² This process requires each examiner to search and retrieve documents on which to base the patentability decision.³

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* Patent examiners can readily search classified paper files, microfilm, and CD-ROMs, comprising United States patents, foreign patent documents, Patent Cooperation Treaty (PCT) publications, as well as a large selection of nonpatent literature, including technical journals, books, magazines, encyclopedias, product catalogues, and industry newsletters. In addition, patent examiners have access to hundreds of in-house and commercial online databases providing convenient access, from their desktop, to millions of United States and foreign patent and nonpatent literature documents.

Id.; see also Lisa Fried, Q & A: PTO Chief: Q. Todd Dickinson Talks About Changes in the Office, N.Y.L.J., Mar. 23, 2000, at 5 (quoting then-USPTO Director Q. Todd Dickinson who stated that in 2000 examiners had “access to over 900 databases,” which provided better access to prior art than ever before).
Examiners have conducted prior art searches as part of the examination process for over 165 years. The USPTO, however, has recently made an unprecedented proposal to outsource prior art searches to commercial vendors in The 21st Century Strategic Plan (Strategic Plan). Many in the intellectual property community are concerned that outsourcing prior art searches is not in the public interest and is detrimental to the patent system. In fact, some critics have

4. See Nancy J. Linck et al., A New Patent Examination System for the New Millennium, 35 HOUS. L. REV. 305, 306-07 (1998) (noting that as of 1998, the U.S. patent examination system, in which “patent applications have been examined for novelty, usefulness, and inventiveness,” served the nation well for over 160 years).


1. The certification might be administered by people who don’t know what they’re doing and/or use inappropriate criteria.
2. The certification process might favor large search firms vs. small firms and independent patent professionals, since the PTO might not want to go through the certification process for just one or two searchers.
3. Because companies filing patents would not be permitted to submit search reports prepared by their in-house searchers (due to possible conflict of interest), the in-house searchers—much of PIUG membership—might face sudden job insecurity.
4. The examiners remaining at the PTO might lose their in-depth knowledge of PTO patent classifications if they no longer perform searches, to the detriment of U.S. classifications’ continued development and the reclassification of old patents.
5. PTO management may just be trying to reduce costs by reducing the number of examiners, at the same time increasing PTO fees, so as to permit Congress to raid even more of those fees for other purposes.
characterized outsourcing prior art searches as putting “the fox in charge of the henhouse.” 7

Some activities are ideally suited for outsourcing to the private sector. 8 However, because a patent examiner’s decision regarding the patentability of an invention disclosed in an application depends on the results of the prior art search, 9 outsourcing the prior art search raises two important questions. First, is the prior art search function so closely intertwined with the examiner’s quasi-judicial patentability determination so as to preclude its separation from the patentability determination? Second, is the prior art search, like the ultimate patentability determination, such an inherent governmental function as to prevent its outsourcing?

Anyone who prepares or prosecutes a patent application has a duty of disclosure, candor, and good faith. 10 Rule 56 of the USPTO Regulations dictates who has the duty to disclose, 11 to whom the duty of disclosure is owed, 12 and the particular information required to be disclosed. 13

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7. Sirhal, supra note 6 (quoting Ronald Stern, President of the Patent Office Professional Association); see also U.S. Patent & Trademark Office, Frequently Asked Questions – Compiled from Examiner E-mails to Under Secretary Rogan, at Q-10, (requiring that an applicant must obtain a search report from only a Certified Search Service “to avoid a conflict of interest and [the] so-called ‘fox-in-the-henhouse’ situation”), at http://www.uspto.gov/web/offices/com/strat200l/faqcompiled.htm (last modified Dec. 5, 2002) [hereinafter Frequently Asked Questions].


9. See John L. Welsh, Searching—To Find Art, G-667 PRACTICING LAW INSTITUTE, PREPARING PATENT LEGAL OPINIONS 71, 75 (2001) (concluding that the patentability opinion is “only as good as the search results it is based upon”); see also U.S. Patent and Trademark Office: Fee Schedule Adjustment and Agency Reform, Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Property of the House Comm. on the Judiciary, 107th Cong. 91 (2002) [hereinafter House Hearing on USPTO Reform] (statement of Ronald J. Stern, President, Patent Office Professional Association) (“The patentability determination can only be as good as the prior art on which that patentability determination is founded.”); Patents: Improving Quality and Curing Defects, Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Property of the House Comm. on the Judiciary, 107th Cong. 22 (2001) [hereinafter House Hearing on Patent Quality] (statement of Jeffrey P. Kushan, Partner, Powell, Goldstein, Frazer, & Murphy, LLP) (“[W]hen a properly trained PTO examiner has all relevant information, he or she can make an accurate conclusion on patentability of an invention.”).

10. 37 C.F.R. § 1.56(a) (2002).

11. Id. § 1.56(c).

12. Id. § 1.56(a).

13. Id.
comply with Rule 56, applicants typically submit all relevant documents to the USPTO for the examiner’s consideration.\textsuperscript{14}

Although applicants need to disclose known relevant documents, they do not need to conduct a prior art search.\textsuperscript{15} Therefore, examiners must conduct their own prior art searches independent of applicants’ prior art disclosures.\textsuperscript{16} Thus, both examiners and applicants “share the responsibility of ensuring that pertinent prior art is . . . considered during examination.”\textsuperscript{17} If adopted, the USPTO’s Strategic Plan would shift these relative responsibilities by requiring the examiner to rely exclusively on a prior art search conducted by a commercial vendor.\textsuperscript{18} Such a shift in relative responsibilities is both legally and practically problematic.\textsuperscript{19} Because the patentability decision is essentially dictated by the prior art search, a private search firm would potentially possess an unprecedented ability to influence the patentability decision.\textsuperscript{20}

Part I of this Comment reviews the presumption of validity accorded to granted U.S. patents and describes both the patent examination process and the search for relevant prior art. Part II explores recent developments in Europe and the United States regarding the prior art search function. Part III argues that the prior art search is inherently part of patent examination and, therefore, cannot be appropriately outsourced. Moreover, this Part argues that the prior art search is inherently a governmental function so intimately related to the public interest as to require government employees to perform the search.

\textsuperscript{14} Id. §§ 1.97-1.98; see also House Hearing on Patent Quality, supra note 9, at 21 (statement of Jeffrey P. Kushan, Partner, Powell, Goldstein, Frazer & Murphy, LLP) (noting that the reason applicants provide the USPTO with all relevant prior art prior to examination is that “[t]he fully informed opinions of an [e]xaminer are worth far more than an opinion on an incomplete record”).

\textsuperscript{15} See U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 609, at 600-18 (U.S. Dep’t of Commerce, U.S. Patent & Trademark Office, 8th ed., 2001) (“There is no requirement that an applicant for a patent make a patentability search.”); see also FMC Corp. v. Hennessy Indus., Inc., 836 F.2d 521, 526 n.6 (Fed. Cir. 1987) (“As a general rule, there is no duty to conduct a prior art search, and thus there is no duty to disclose art of which an applicant could have been aware.”). But see John A. Dienner, Lightening the Load of the Patent Examiner, 47 J. PAT. OFF. SOC’Y 148, 151 (1965) (noting that “[g]enerally, no worthwhile application for patent is filed without a search of previously acquired knowledge of the prior art”).

\textsuperscript{16} See 37 C.F.R. § 1.104(a)(1) (2002) (mandating that the examiner “make a thorough investigation of the available prior art relating to the subject matter of the claimed invention”). See generally MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 904.02 (requiring a thorough search of the prior art as part of the examination of a patent application).

\textsuperscript{17} USPTO Public Hearing on Prior Art, supra note 2, at 28,804.

\textsuperscript{18} See infra Part II.B.

\textsuperscript{19} See infra Part III.

\textsuperscript{20} See infra Part III.
Finally, Part IV provides an alternative to outsourcing the examiner's prior art search by suggesting a three-pronged search approach that combines the relative expertise of examiners, private search firms, and state-of-the-art automated search tools to obtain the most comprehensive search results practicable.

I. THE “STRONG” PRESUMPTION OF PATENT VALIDITY: COURTS’ DEFERENCE TO USPTO TECHNICAL EXPERTISE

A. The Presumption of Validity of Granted U.S. Patents

U.S. patents are presumed valid.\textsuperscript{21} Because courts defer to the USPTO’s special technical expertise\textsuperscript{22} and have faith in the examination process,\textsuperscript{23} challengers must show a patent is invalid by clear and convincing evidence.\textsuperscript{24} The courts’ deference to the integrity of the examination process, however, is predicated on the examiner’s consideration of the most pertinent prior art during examination.\textsuperscript{25} Thus,

\begin{itemize}
  \item \textsuperscript{21} 35 U.S.C. § 282 (2000).
  \item \textsuperscript{22} Conopco, Inc. v. May Dept. Stores Co., 784 F.Supp. 648, 669 (E.D. Mo. 1992), rev’d on other grounds, 46 F.3d 1556 (Fed. Cir. 1994); see also Bolkcom v. Carborundum Co., 523 F.2d 492, 498 (6th Cir. 1975) (noting that every patent issued by the USPTO possesses an initial presumption of validity, which is justified by patent law complexities and USPTO expertise). Qualifications of examiners vary widely among individual examiners and among technologies. See Scott Wolinsky, \textit{An Inside Look at the Patent Examination Process}, METRO. CORP. COUNS., Sept. 2002, at 18. One commentator noted, “All examining positions require at least a bachelor’s degree in computer science, physical science or engineering, and varying levels of professional engineering experience or graduate study.” \textit{Id.} The USPTO also hires recent law school graduates and people with doctoral degrees. \textit{Id.}
  \item \textsuperscript{24} Al-Site Corp. v. VSI Int’l., Inc., 174 F.3d 1308, 1323 (Fed. Cir. 1999). \textit{But see} Mark A. Lemley, \textit{Rational Ignorance at the Patent Office}, 95 NW. U. L. REV. 1495, 1529 (2001) (arguing that the presumption of validity should be rebutted by a preponderance of the evidence rather than clear and convincing evidence).
  \item \textsuperscript{25} See John L. King, \textit{Patent Examination Procedures as Inputs to Patent Quality}, at 19, \textit{in NATIONAL RESEARCH COUNCIL, PATENTS IN THE KNOWLEDGE-BASED ECONOMY} (Wesley M. Cohen & Stephen A. Merrill eds., forthcoming 2003) (concluding that “the quality of patent examination affects the validity of issued patents”), \textit{available at} http://www7.nationalacademies.org/step/King_paper.doc (last visited Jan. 31, 2003); \textit{see also} House Hearing on Patent Quality, \textit{supra} note 9, at 55 (statement of James F. Cottone, President, National Intellectual Property Researchers Association) (noting that a quality examination results when the examiner considers a complete set of all pertinent references, typically between 1,000 to 3,000 documents depending on the technology and particular application); Howard M. Eisenberg, \textit{Patent Law You Can Use: Patentability Searching} (2000), at 3-4 (noting that a challenger has a heavy burden to overcome a patent’s presumption of validity based on prior art considered during examination), \textit{available at} http://www.yale.edu/ocr/invent_guidelines/docs/patentability.pdf (last visited
if the USPTO does not consider the most pertinent prior art, the validity presumption is considerably weakened.26

Challengers must meet the clear and convincing evidentiary standard in order to undermine the validity of a granted patent.27 When rejecting a patent application prior to a patent’s grant, however, the USPTO must meet the standard of preponderance of the evidence.28 There are two reasons for this inconsistency. In a pending application, the situation is fluid; the applicant may freely amend or add claims and engages in ex parte prosecution with the agency.29 After the patent has been granted, however, prosecution is closed, and the presumption of validity effectively shifts the burden of persuasion to a challenger to prove the patent’s invalidity.30 Although some commentators have argued that

Jan. 31, 2003); Al-Site, 174 F.3d at 1323 (noting the validity presumption “carries with it a presumption that the [examiner did his duty and knew what claims he was allowing”).

26. See Monroe Auto Equip. Co. v. Heckettorn Mfg. & Supply Co., 332 F.2d 406, 413 (6th Cir. 1964); see also Duty of Disclosure, 57 Fed. Reg. 2021, 2024 (Jan. 17, 1992) (to be codified at 37 C.F.R. pts. 1 & 10) (“If the [USPTO] does not have needed information, meaningful examination of patent applications will take place for the first time in an infringement case before a district court.”); Kasdan, supra note 23, at 183 (concluding that if the USPTO knows that its examination is below its normal standard, such examinations should not receive such a strong presumption of validity); Iain Cockburn et al., Are All Patent Examiners Equal? The Impact of Examiners on Patent Characteristics and Litigation Outcomes, in NATIONAL RESEARCH COUNCIL, PATENTS IN THE KNOWLEDGE-BASED ECONOMY 21 (Wesley M. Cohen & Stephen A. Merrill eds., forthcoming 2003) (noting that the overall probability of a court upholding validity is approximately fifty percent depending on the technological area and the age of the patent), available at http://www7.nationalacademies.org/step/Stern_et_al_Paper.pdf (last visited Jan. 31, 2003); Ashcroft v. Paper Mate Mfg. Co., 434 F.2d 910, 914 (9th Cir. 1970) (noting that the presumption of validity “is merely an aid to inquiry and does not automatically foreclose thought and analysis”). Cf Contour Chair Lounge Co. v. True-Fit Chair, Inc., 648 F. Supp. 704, 716 (E.D. Mo. 1986) (“Introduction of prior art not considered by the examiner can help the validity challenger carry its burdens . . . but it does not ‘weaken’ or otherwise affect the statutory presumption of validity.”).

27. See, e.g., In re Caveney, 761 F.2d 671, 674 (Fed. Cir. 1985).

28. Id.

29. See, e.g., In re Etter, 756 F.2d 852, 858-59 (Fed. Cir. 1985). Ex parte prosecution involves: (1) an initial patentability determination following examination of the application; (2) notification of the applicant of the decision, which begins a fixed period of time for the applicant to respond by submitting arguments and/or claim amendments; and (3) a second patentability determination of the application as amended and in view of the arguments presented. MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 706, at 700-17, 700-18; see also 37 C.F.R. §§ 1.104(a)(2), 1.111, 1.134, (2002). Usually, the second patentability determination is made final, thus limiting the applicant’s ability to amend the application. See Cockburn, supra note 26, at 7. At this stage, however, the applicant may appeal the decision, abandon the application, or elect to prosecute the application further by filing a continuing application. See id.

30. See, e.g., Etter, 756 F.2d at 858-59. But see Lemley, supra note 24, at 1529 (arguing that the presumption of validity should be rebutted by the preponderance of evidence instead of clear and convincing evidence).
imposing a higher evidentiary standard for granted patents is improper for issues not considered by the USPTO, the validity presumption nevertheless remains a useful procedural device by providing substantial deference to USPTO patentability determinations.

B. Patent Examination: A Quasi-Judicial Process

The first U.S. patent examination system was implemented after passage of the Patent Act of 1790. Modeled after the French system, the U.S. system entrusted examination to cabinet-level officers who examined applications on a part-time basis. Due in part to dissatisfaction with the quality of the part-time examiners' work, however, this system was soon replaced with a registration system. Lasting only a few decades, the registration system was a dismal failure and was abandoned in 1836 when Congress reestablished the examination system. Examination became a full-time public service

31. See Lemley, supra note 24, at 1528-29; see also Charles E. Phipps, The Presumption of Administrative Correctness: The Proper Basis for the Clear and Convincing Evidence Standard, 10 Fed. Cir. B.J. 143, 149-50 (2000) (arguing that the clear and convincing standard is inappropriate in cases where the presumption of administrative correctness does not apply).


33. Id.; see also B.E. Lanham & J. Leibowitz, Classification, Searching and Mechanization in the U.S. Patent Office, 40 J. Pat. Off. Soc'y 86, 86-87 (1958) (noting that patent classification was unnecessary in early examination efforts because the prior art search required by the 1790 Act was limited to relatively few patents and books).

34. See Prager, supra note 32, at 289; see also John T. Roberts, A Reappraisal of the American System of Patent Examining, 48 J. Pat. Off. Soc'y 156, 164 (1966) (noting that another reason for replacing the examination system with the registration system was the shortage of formally educated people to examine applications).

35. Prager, supra note 32, at 289; see also Roberts, supra note 34, at 166-67 (quoting an 1836 Congressional report explaining that the registration system's failure was due to (1) the granting of a considerable number of invalid patents, (2) the flooding of patent monopolies, (3) the alarming rise in litigation, and (4) the increase in fraud on the Patent Office). See generally Lemley, supra note 24, at 1527 (noting that one of the advantages of an examination system over a registration system is that it requires patentees to restrict the scope of their claims, thereby preventing overly broad claims from covering entire industries); Linck et al., supra note 4, at 313 (noting that abandoning examination altogether would overburden the courts and unreasonably increase costs).

occupation performed by professionals specializing in reviewing applications.  

Today, the examination system is mandated by statute, which directs the USPTO to “cause an examination to be made” and to issue a patent if the applicant is so entitled under the law. 38 While the term “examination” is not further defined in the statute, USPTO regulations detail the examination process. 39 Rule 104 requires the examiner to study the patent application, investigate “the available prior art relating to the subject matter of the claimed invention,” and ensure compliance with applicable law, patentability, and matters of form. 40 Based on the preponderance of the evidence, 41 the examiner decides whether the invention is new, useful, novel, and nonobvious under established statutory standards. 42 Patent examiners have been characterized as quasi-judicial officials who must possess both technical and legal skills to perform their duties. 43 This quasi-judicial function has effectively served its purpose since the inception of the modern examination system. 44 

The USPTO has noted that “[l]ocating relevant prior art is one of the most important aspects of the patent examining process.” 45 Indeed, the integrity of the examination system depends on the thoroughness of the

37. Prager, supra note 32, at 290. Indeed, the first patent examiner hired in 1836 was intimately familiar with the prior art collection at that time and was directed to apply prior art to reject applications. See id.
38. 35 U.S.C. § 131 (2000). As noted by one commentator, the modern patent system is basically equivalent to that of 1836. See Meller, supra note 36, at 257.
39. 37 C.F.R. § 1.104 (2002). Cf. BLACK’S LAW DICTIONARY 387-88 (6th ed. 1991) (defining the term examination in the invention context as “[a]n inquiry made at the patent-office, upon application for a patent, into the novelty and utility of the alleged invention, and as to its interfering with any other patented invention”).
41. See, e.g., In re Oetiker, 977 F.2d 1443, 1445 (Fed. Cir. 1992) (“[P]atentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument.”).
43. W. Elec. Co. v. Piezo Tech., Inc., 860 F.2d 428, 433 (Fed. Cir. 1988) (“It is no more appropriate to question a patent examiner’s technical expertise than it is to question the quality of a judge’s law school education or judicial experience.”); see also discussion supra note 22. See generally Butterworth v. United States ex rel Hoe, 112 U.S. 50, 67 (1884) (noting the quasi-judicial nature of the patent examiner’s position).
44. See Outline of the History of the United States Patent Office, 18 J. PAT. OFF. SOC’Y 1, 216 (1936). See generally Linck et al., supra note 4, at 306-07 (1998) (noting that as of 1998, the U.S. patent examination system, in which “patent applications have been examined for novelty, usefulness, and inventiveness,” served the nation well for over 160 years).
45. USPTO Public Hearing on Prior Art, supra note 2, at 28,804.
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prior art search associated with every application. Accordingly, under Rule 104, the examiner must thoroughly investigate the prior art relating to the claimed invention and consider all subject matter pertinent to the disclosure. Thus, the examiner is interested in identical subject matter as well as all related and analogous content. Throughout the search, the examiner must consider the scope and approach of the search while studying each document. Thus, as the examiner uncovers art during the search, he or she can modify the search accordingly and, if necessary, identify additional search areas to expand the search.

As noted in a 1961 Judiciary Committee study of the examination process, the examiner must use sound judgment in assessing the extent of the prior art search. Moreover, the Committee emphasized that examiners obtain their "specialized knowledge" only through experience and that such "specialized knowledge" is critical to understanding prior


47. 37 C.F.R. § 1.104(a)(1) (2002). See generally USPTO Public Hearing on Prior Art, supra note 2, at 28,804 (noting that one of the "most important aspects" of patent examination is locating prior art); Lanham & Leibowitz, supra note 33, at 97 (characterizing the patent search as an inquiry into whether there is "a disclosure anywhere of the concept expressed in the claimed subject matter"). But see SENATE SUBCOMM. ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF THE COMM. ON THE JUDICIARY, 86TH CONG., THE EXAMINATION SYSTEM IN THE U.S. PATENT OFFICE, STUDY NO. 29 14 (Comm. Print 1961) [hereinafter S. JUDICIARY COMM. STUDY NO. 29] (noting that the USPTO cannot undertake a "validity search" of several weeks' duration inspecting every possible publication—no matter how remote).

48. MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 904.03, at 900-55. Conducting the search requires the examiner to identify the scope and extent of the search, select the proper search tools, and "determin[e] the appropriate search strategy for each search tool selected." Id. § 904.02, at 900-51. A proper field of search includes the appropriate subclasses in which the claimed subject matter is classified in the U.S. classification system. Id. § 904.02(a), at 900-52. As a corollary to conducting an effective classified search, however, experience and familiarity with the individual patents within particular subclasses are essential. See S. JUDICIARY COMM. STUDY NO. 29, supra note 47, at 12.

49. Lanham & Leibowitz, supra note 33, at 88.
50. See id.
51. Schwartz, supra note 46, at 806.
52. See Lanham, supra note 33, at 88.
The Judiciary Committee also noted that the extent and adequacy of the search depend on the examiner's experience, competency, sufficient patent classification efforts, and work-related pressures. The Committee concluded that, ultimately, "[t]he examiner's competence and judgment in analyzing the subject matter of the invention, and its possible relationship to prior development, determine[] the extent and quality of the investigation of the prior art." Thus, the examiner's judgment, competence, and experience are critical factors affecting prior art search quality.

The responsibility of ensuring consideration of pertinent prior art during examination is shared between patent examiners, who must thoroughly search the prior art under Rule 104, and applicants, who must submit information known to them to be material to patentability under Rule 56. The USPTO recognizes, however, that certain emerging technologies, such as telecommunications and computer-related arts, present unique search challenges because the best prior art exists mainly in non-patent literature that is difficult to access. The magnitude of the problem and resulting public criticism motivated the USPTO to conduct public hearings on the issue in 1999.

The problem is exacerbated by the limited time available for examiners to conduct the prior art search. An examiner is allotted an

54. Id. at 16-17.

55. Id. at 14-16.

56. Id. at 16; see also R. Lee Grantham, The PTO's 21st Century Strategic Plan: A Review and Comments Regarding Quality and the Prior Art Function, INTELL. PROP. TODAY, Nov. 2002, at 6-8 ("Patent searching is a qualitative activity...[requiring] sorting through hundreds of printed documents and selecting a handful that, solely in the searcher's judgment, contain salient features [that] suggest similarity to the inventor's idea.").

57. USPTO Public Hearing on Prior Art, supra note 2, at 28,804.

58. See id. at 28,804-05; see also Bruce A. Lehman, The Leadership of the USA in the Field of Intellectual Property, BUS. PERSP., Summer/Fall 2001, at 22 (concluding that even with an adequate number of examiners, the USPTO is unable to deal effectively with applications involving business methods and computer software "because it lacks a comprehensive and easily accessible database of non-patent prior art").

59. USPTO Public Hearing on Prior Art, supra note 2, at 28,804.

60. See John R. Thomas, Collusion & Collective Action in the Patent System: A Proposal for Patent Bounties, 2001 U. ILL. L. REV. 305, 314 (2001); see also S. JUDICIARY COMM. STUDY NO. 29, supra note 47, at 16 (noting that because examiners are confronted with the demands of disposing of at least a reasonable number of applications from an increasing backlog, "the examiner necessarily limits his search to the minimum that he
average of between sixteen and seventeen hours for each application, about sixty percent of which is spent on the prior art search. Additionally, substantial time allotment differences exist among individual examiners due to their seniority and to the technical complexity of their respective disciplines. Despite these time constraints, the Intellectual Property Law Section of the American Bar Association (ABA) concluded that U.S. examiners "can perform the best, highest quality searches in the world." Conversely, some considers satisfactory"); Wolinsky, supra note 22, at 18 ("Each USPTO examiner is allocated a specific number of hours to spend during the prosecution of a patent application . . . . Unlike in a law firm where attorneys bill for each hour worked, patent examiners work on a piecemeal basis whereby the examiner is credited only for the number of applications examined."); Milton Weissman, Testimony Before the Senate Judiciary Committee, Subcommittee on Patents, Trademarks, and Copyrights, Relating to S. 1321 (Hart Bill), 55 J. PAT. OFF. SOC'Y 604, 606-07 (1973) (quoting a 1918 Assistant Commissioner's speech addressed to examiners that "[i]f you have to choose between making a less thorough examination and a general and material delay in getting the applications through, it is probably more to the public interest that the prosecution be prompt . . . [and] . . . if your examination is not sufficiently thorough, this is directly the fault of Congress"). Cf. Carter-Wallace, Inc. v. Davis-Edwards Pharmacal Corp., 443 F.2d 867, 887 (2d Cir. 1971) (Mansfield, J., dissenting) (reminding the majority that the lack of Patent Office time and staffing to permit exhaustion of the prior art has not persuaded Congress that there is a problem with the system due to the existence of the statutory presumption of validity).

61. Thomas, supra note 60, at 314. Another commentator made the following startling observation:

Examiners have astonishingly little time to spend on each application—on average, a total of eighteen hours, including the time spent reading the application, reading the submitted prior art, searching for and reading prior art in databases accessible to the PTO, comparing that prior art to the application, writing an office action, reading and responding to the response to office action, iterating the last two steps at least one and often more times, conducting an interview with the applicant, and ensuring that the diagrams and claims are in form for allowance.

Lemley, supra note 24, at 1496 n.3. In view of the time constraint, Lemley suggests doubling the amount of time allotted to examiners. See id. at 1508.


63. See Cockburn, supra note 26, at 9 ("Examiners may vary substantially in their effective average 'approval time'.").

64. House Hearing on USPTO Reform, supra note 9, at 49 (statement of Charles P. Baker, Chair, Intellectual Property Law Section, American Bar Association); see also Roberts, supra note 34, at 190 (noting a study in which many defendants of valid patents generally found no better art than examiners—even after searching areas the examiner seldom considers). But see Harold C. Wegner, International Patent Law Developments, 4 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 329, 337-38 (1993) (concluding that the European search is "the best in the world" in view of the "brilliant" searches performed by the treaty-based corps of EPO career examiners); Lemley, supra note 24, at 1528 (noting that examiners "regularly miss the most relevant prior art"); House Hearing on Patent Quality, supra note 9, at 61 (statement of Michael K. Kirk, Executive Director,
commentators have harshly criticized the USPTO for issuing patents of allegedly poor quality. Critics cite high examiner turnover, lack of experience in certain areas (e.g., business methods), and ignorance of relevant prior art due to time pressure. Critics have also alleged that examiners give only cursory consideration to non-patent literature in areas where such literature is more important to the prior art search than patents.

In response to such criticism, the USPTO implemented concrete measures to improve search quality, most notably by promulgating Rule 105 in 2000. In essence, Rule 105 authorizes the examiner to require an applicant to provide any information deemed "reasonably necessary" to examine the application properly. In theory, this requirement ensures

American Intellectual Property Law Association) ("[E]xaminers sometimes don't find the best prior art, and sometimes when they do, their judgments are little bit short.").


67. Id. at 765.

68. Id. at 765.


70. 37 C.F.R. § 1.105(a)(1) (2002); see also MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 704.11, at 700-07 (noting that the standard of "reasonable necessity" is generally met where: (1) the claimed subject matter cannot be adequately searched, or (2) either the application file or lack of relevant prior art found in the
that the examiner has at least a minimum threshold level of relevant prior art on which to base a patentability decision. The examiner's use of Rule 105, however, is not a substitute for a prior art search, which is performed by the examiner.

The promulgation of Rule 105 is just one of a number of efforts worldwide to reform the prior art search process. While international patent offices attach great importance to the prior art search, patent offices are under unprecedented pressure to increase efficiency, motivating several noteworthy changes to prior art searching. The following section contrasts two recent developments regarding the prior

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72. MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 704.11, at 700-07.
74. See PATENTS DIRECTORATE, THE PATENT OFFICE (GREAT BRITAIN), Consultation on a Proposal to Contract Out Some Patent Searches and Examinations (Mar. 21, 2002), at 3 (noting the strain on global patent offices is due to the insufficient number of examiners to examine the increasing numbers of applications), available at http://www.patent.gov.uk/about/consultations/contract/contract.pdf (last visited Oct. 21, 2002).
75. See, e.g., THE PATENT OFFICE (GREAT BRITAIN), UK and Danish Patent Offices Increase Competitiveness Through Patent Search Deal (describing the British Patent Office's contract to outsource patent searches for 750 patent applications to the Danish Patent & Trademark Office in order to "increase[s] the speed of its service to meet customer demand"), at http://www.patent.gov.uk/about/press/releases/2003/200203.htm (last updated Feb. 24, 2003); see also AIPLA/FICPI Colloquium on Pendency Reduction, Rome, Italy, Nov. 18-19, 2001, at 3 (quoting Dr. Ingo Kober, President, EPO, noting that the EPO's implemented measures to respond to its increase in workload include: (1) "rationalizing" its work under the Patent Cooperation Treaty to "place more emphasis on the examination carried out at the time of the search," and (2) bringing examination and search together), available at http://www.aipla.org/html/ficpi/2001/ficpi1118.pdf (last visited Apr. 20, 2003); id. at 4 (quoting Shinjiro Ono, Director-General of Appeals Dep't, Japan Patent Office (JPO), noting that the JPO's response to its increasing workload included outsourcing prior art searches to the Industrial Property Cooperation Center (IPCC), which maintains "close communications" with JPO examiners).
art search at the European Patent Office (EPO) and the USPTO. Interestingly, while both patent offices are faced with similar pressures, they have proposed diametrically opposite solutions.  

II. RECENT U.S. AND EUROPEAN PRIOR ART SEARCH DEVELOPMENTS

A. The EPO's BEST Initiative: A Unified Search and Examination Process

The EPO is an international patent organization that utilizes a centralized procedure to enable an applicant to obtain patent protection in twenty European countries with a single patent grant. Like the USPTO, the EPO employs an examination system that relies on a prior art search. Unlike the USPTO, the EPO historically separated the search and substantive examination into two distinct prosecution stages. A "search examiner" conducted the search, and a "substantive examiner" performed the examination. Under this system, a search examiner studied the application, searched for the prior art documents, and provided a search report to a substantive examiner. A substantive examiner then studied the same application and the search report, resulting in a duplication of effort.

To eliminate this perceived inefficiency, the EPO launched an official project in 1993 for Bringing Examination and Search Together (BEST). As its name suggests, BEST assigns both search and examination functions to a single examiner. The benefits realized by the EPO include reducing the time required per application, eliminating conflicts between search and substantive examiners, and increasing the consistency between the search and substantive examiners regarding

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76. Compare Part II.A infra, with Part II.B infra.
78. Id. at 9. See generally Wegner, supra note 65, at 222-23 (distinguishing EPO examiners from U.S. examiners by characterizing EPO examiners as "an elite diplomatic corps" with "great status" coupled with favorable salary and perquisites, greater experience, better language skills, higher specialization, and much lower work quotas).
81. See id.
82. See id.
83. Id.
84. Id.
cited documents. Although BEST has not yet been fully implemented, it has been highly successful to date with full-scale implementation planned between 2004 and 2006.

B. The USPTO 21st Century Strategic Plan: Outsourcing the Prior Art Search to Commercial Vendors

In stark contrast to the EPO's BEST initiative, the USPTO has proposed not only to separate the search and examination functions, but also to contract out the search to a commercial vendor. In a report accompanying the Patent and Trademark Authorization Act of 2002, the Judiciary Committee required the USPTO to "develop a [five]-year strategic plan to establish goals and methods by which the agency can enhance patent and trademark quality while reducing application pendency." To this end, the committee directed the USPTO to "eliminate any task currently imposed on examiners that can be handled by administrative staff." Moreover, to increase efficiency, the committee ordered the USPTO to rely on "earlier search and examination results from the [EPO] performed under the Patent

85. Id. Despite these perceived drawbacks of the EPO system, at least one commentator feels that the EPO search is the best in the world. See Wegner, supra note 64, at 337.

86. See AIPLA/FICPI Colloquium on Pendency Reduction, supra note 75, at 3 (quoting Dr. Ingo Kober, President, EPO, predicting that, as of Nov. 2001, the BEST program "will be introduced office-wide within the [next] four or five years"); available at http://www.aipla.org/html/ficpi/2001/ficpi1118.pdf (last visited Apr. 20, 2003); see also Samson Helfgott, International Intellectual Property Group News, 18 INTELL. PROP. L. NEWSL. (ABA Section of Intellectual Prop. Law, Chicago, Ill.), Spring 2000, at 24.

87. See Bruce A. McDonald, International Intellectual Property Rights, 35 INT'L LAW. 465, 467 (2001) (noting that the BEST project "has been expanded with positive results"); see also John J. Gresens, Colloquium on the Reduction of Patent Examination Pendency, 20 INTELL. PROP. L. NEWSL. (ABA Section of Intellectual Prop. Law, Chicago, Ill.), Winter 2002, at 45 (noting the EPO's expansion of BEST as a solution to handle its backlog).

88. See AIPLA/FICPI Colloquium on Pendency Reduction, supra note 75, at 3; see also Irwin M. Krittman, Recent Developments in the EPO, INTELL. PROP. L. NEWSL. (ABA Section of Intell. Property Law, Chicago, Ill.), Spring 2000, at 27; Helfgott, supra note 86.

89. Under the revised Strategic Plan, the USPTO selects the contractor. See U.S. PATENT & TRADEMARK OFFICE, THE 21ST CENTURY STRATEGIC PLAN, at http://www.uspto.gov/web/offices/com/strat21/index.htm (last visited Apr. 19, 2003). However, the USPTO initially proposed in 2002 that the applicant would select the contractor. See id.; see also THE 21ST CENTURY STRATEGIC PLAN, supra note 5, pt. 3, P-01, at 8.


Cooperation Treaty." The agency was also encouraged to use contract personnel more imaginatively to assist examiners in “administrative tasks.”

On June 3, 2002, the USPTO unveiled its Strategic Plan, which was later revised in February 2003. The agency announced the “aggressive and far-reaching” Strategic Plan as “a systematic attempt to incorporate the best-thinking of our applicants, our counterparts in Europe, Japan, and other countries, and our stakeholders.” The Strategic Plan is detailed and comprehensive, proposing unprecedented changes to virtually the entire spectrum of USPTO operations to achieve three major goals: “agility,” “capability,” and “productivity.” The Strategic Plan, however, introduces a particularly controversial change to the current examination system that will have significant implications for the patentability determination – the implementation of a “multi-track” examination process.

The Strategic Plan proposes to replace the current examination process with a “multi-track” system. With limited exceptions, the proposal precludes U.S. examiners from conducting prior art searches. Instead, the USPTO will rely solely on search results provided by private contractors or foreign intellectual property offices having bilateral

92. See generally THE 21ST CENTURY STRATEGIC PLAN, supra note 5.
93. See generally THE 21ST CENTURY STRATEGIC PLAN, supra note 5.
94. See generally House Hearing on USPTO Reform, supra note 9, at 7 (statement of James E. Rogan, Under Secretary of Commerce for Intellectual Property and Director of the U.S. Patent & Trademark Office) (justifying the Strategic Plan by predicting that, if nothing is done by the USPTO, patent pendency rates could reach three to four years from the current average of two years).
95. Id. at 2. See generally House Hearing on USPTO Reform, supra note 9, at 7 (statement of James E. Rogan, Under Secretary of Commerce for Intellectual Property and Director of the U.S. Patent & Trademark Office) (justifying the Strategic Plan by predicting that, if nothing is done by the USPTO, patent pendency rates could reach three to four years from the current average of two years).
97. Id.
98. The first track of the multi-track examination process provides that the U.S. examiner would conduct the prior art search as a near-term measure. Id. at 3. However, the USPTO expects that the number of applications searched by U.S. examiners will diminish as more searches are outsourced. Id. Another exception involves the examiner’s assessment of the quality of the contractor’s search. See U.S. PATENT & TRADEMARK OFFICE, THE 21ST CENTURY STRATEGIC PLAN, Certification of Searching Authorities, at 2, at http://www.uspto.gov/web/offices/com/strat21/action/q8p07_01.htm (last modified Apr. 3, 2003) (noting that if the examiner concludes the contractor’s search is inadequate after reviewing the submitted search report and cited prior art, “the examiner in his/her discretion might perform a supplemental search as appropriate”).
99. Id.
agreements with the USPTO. By reducing the examiner’s search burden in this manner, the USPTO predicts certain benefits. These benefits include: a five to twenty percent examiner productivity increase because examiners will “better” spend their time on patentability analysis; cost savings via reduced search time and effort; and elimination of the need for an extensive search system infrastructure supporting high-volume searching.

Under the revised Strategic Plan, the USPTO will conduct the prior art search by first selecting a commercial vendor (known as a “Certified Search Service” (CSS)) that submits a certified search report upon which the examiner will rely. However, if a search is deemed inadequate, the examiner will: (1) perform a “supplemental search” subject to supervisory approval, or (2) require the contractor to “correct” the search and search report. In contrast, the original Strategic Plan provided that if the examiner determined the search was inadequate, he or she would notify the applicant and seek supplemental information under Rule 105. Although it is unclear why Rule 105 was not mentioned in the revised Strategic Plan in connection with the examiner’s remedies to correct an inadequate CSS search, presumably Rule 105 will remain available to examiners.

103. THE 21ST CENTURY STRATEGIC PLAN, supra note 5, at 9.
104. Id. at 9; see also Legislative Hearing on H.R. 1561, “United States Patent and Trademark Fee Modernization Act of 2003,” Before the Subcomm. on Courts, the Internet, and Intellectual Property of the House Comm. on the Judiciary, 107th Cong. (2003) (statement of James E. Rogan, Under Secretary of Commerce for Intellectual Property and Director of the U.S. Patent & Trademark Office) (“By outsourcing the search function, we can ensure that the patent examiners of tomorrow will be like the quality review examiners of yesterday in that they will begin with a more complete search and set of information as their starting point.”); Wegner, supra note 73, at 6 n.3 (concluding that because the Japanese Patent Office outsourced the prior art search, Japanese examiners have more time for judging patentability, thus “elevating the quality of their position”).
105. THE 21ST CENTURY STRATEGIC PLAN, supra note 5, at 3.
106. See id. at 8.
107. See THE 21ST CENTURY STRATEGIC PLAN, Certification of Searching Authorities, supra note 100, at 2.
108. See THE 21ST CENTURY STRATEGIC PLAN, supra note 5, at 11; see also Frequently Asked Questions, supra note 7, at Q-12, Q-20 (noting that examiners may use Rule 105 to request specific technical information from applicants via a CSS). See generally supra notes 69-72 and accompanying discussion of Rule 105.
A CSS must be certified by the USPTO, and following initial certification, the CSS must periodically be re-certified. Under the original Strategic Plan, an applicant using a CSS would still have been subject to the duty of candor and good faith under Rule 56. Presumably, comparable standards would apply to a USPTO-selected CSS under the revised Strategic Plan. Thus, under commensurate standards, a CSS will be considered to have acted in good faith provided there is no intent to mislead the USPTO, the search incorporates a reasonable set of search criteria, and it reasonably encompasses the scope of the prior art.

III. IS IT APPROPRIATE TO OUTSOURCE THE PRIOR ART SEARCH?

Despite the laudable goals cited in the Strategic Plan, outsourcing the search is inappropriate in view of substantial legal and practical problems. The prior art search is a discretionary decision-making
process inextricably intertwined with examination so as to preclude its outsourcing. The prior art search is therefore inherently governmental and is most appropriately performed by government examiners. Moreover, practical problems resulting from outsourcing could actually diminish the efficiency benefits sought to be achieved by the Strategic Plan.

A. The Prior Art Search Function Is Necessarily Decision-Making Activity Tantamount to an "Inherently Governmental Function"

As noted by the U.S. Supreme Court, a U.S. patent serves a paramount public interest by granting exclusive constitutional privileges to its owner. The "far-reaching social and economic consequences" of this grant necessitate that the patentability determination be free from fraud or inequitable conduct. Accordingly, in exercising patentability determinations, patent examiners act in a quasi-judicial capacity, and their decisions have significant social and economic impact. Therefore, the examiner's quasi-judicial role is a discretionary function that among patent attorneys regarding outsourcing searches is that "the devil will be in the details" and "whether it's a good or bad thing will depend on how it's implemented").

116. See discussion infra Parts III.A, D.
117. See discussion infra Part III.A.
118. See discussion infra Part III.E.
120. Precision Instrument, 324 U.S. at 816. See generally Lehman, supra note 58, at 21 ("A patent is a very strong right, and owning a patent can have an extremely significant economic impact.").
121. W. Elec. Co. v. Piezo Tech., Inc., 860 F.2d 428, 431 (Fed. Cir. 1988). In fact, prior to 1960, primary examiners had to have a law degree. Weissman, supra note 60, at 621.
122. Lindsey v. United States, 778 F.2d 1143, 1146 (5th Cir. 1985) (noting the examiner's patentability determination necessarily involves decision-making "weighing considerations of social, economic, and political policy"); see also Lehman, supra note 58, at 21 ("A patent is a very strong right, and owning a patent can have an extremely significant economic impact."); S. JUDICIARY COMM. STUDY NO. 29, supra note 47, at 26 (noting that because there is no general advocate for the public interest, "[t]he examiner must act as a court of original jurisdiction and at the same time protect the public interest against the grant of invalid patents as well as patents of unduly broad scope"); Al Lawrence Smith, Negotiating With Patent Examiners, 72 J. PAT. & TRADEMARK OFF. SOC'Y 168, 169 (1990) ("[T]he examiner's] client is the public at large.").
123. See Lindsey, 778 F.2d at 1146 (holding a patent examiner immune from tort liability under the discretionary function exception to the Federal Tort Claims Act, 28 U.S.C. § 2680, because the examiner's patentability determination necessarily involves decision-making that weighs "considerations of social, economic, and political policy"); see also Chamberlin v. Isen, 779 F.2d 522, 525-26 (9th Cir. 1985) (holding that a patent examiner met the discretionary function exception to the Federal Tort Claims Act because the examiner's decision regarding clarity and definiteness of the application under 35 U.S.C. § 112 implicates the social and economic concerns underlying the patent system);
clarifies and strengthens intellectual property rights, ultimately for the public good.24

The prior art search is a discretionary component of the quasi-judicial examination process.25 As noted by the Judiciary Committee in 1961, the examiner must exercise judgment to determine the extent of the prior art.26 Moreover, the examiner's competence and judgment essentially determine the quality of the prior art search.27 Absent a quality search, the examiner will not have the necessary information on which to base a sound patentability determination.28 Therefore, the prior art search results essentially dictate the outcome of the quasi-judicial patentability decision.29 In view of the far-reaching social and economic consequences of the examiner's decision,30 the quasi-judicial officials making such decisions are best suited to obtain the prior art upon which to base their

Cockburn, supra note 26, at 24 (concluding that "[e]xaminers necessarily exercise discretion").

124. See King, supra note 25, at 23 ("Patent examination contributes to the clarity and strength of intellectual property rights, and therefore plays an important role in the patent system as a whole."); see also Lehman, supra note 58, at 21 ("The quality and trustworthiness of the examination system is at the core of investor confidence in many high-tech companies."). But see Cockburn, supra note 26, at 9 (noting the inconsistency among examiners in granting patents and concluding that "there may be as many patent offices as there are patent examiners"); John R. Thomas, The Responsibility of the Rulemaker: Comparative Approaches to Patent Administration Reform, 17 BERKELEY TECH. L.J. 727, 759 (2002) ("The USPTO is Balkanized into technology-based subdivisions that sometimes act under different search and examination policies than other divisions.").

125. See Welsh, supra note 9, at 75 (concluding that the patentability opinion is "only as good as the search results it is based upon"); see also House Hearing on USPTO Reform, supra note 9, at 91 (statement of Ronald J. Stern, President, Patent Office Professional Association) ("The patentability determination can only be as good as the prior art on which that patentability determination is founded.").

126. S. JUDICIARY COMM. STUDY NO. 29, supra note 47, at 14 (noting that such "judgment can only come with experience").

127. Id. at 16.


129. See discussion supra note 121.

130. See Lindsey v. United States, 778 F.2d 1143, 1146 (5th Cir. 1985) (noting that the examiner's patentability determination necessarily involves decision-making that weighs "considerations of social, economic, and political policy"); see also S. JUDICIARY COMM. STUDY NO. 29, supra note 47, at 26 (noting that because there is no general advocate for the public interest, "[t]he examiner must act as a court of original jurisdiction and at the same time protect the public interest against the grant of invalid patents as well as patents of unduly broad scope"); Smith, supra note 122, at 169 ("[The examiner's] client is the public at large.").
Preserving the Presumption of Patent Validity

decisions. \(^{131}\) One might argue that an approved CSS would match or exceed the examiner's technical competence and thus, theoretically, be able to perform an equally valid search. \(^{132}\) But, even if a private vendor's search report appears to present quality results, it is still very difficult to determine whether it can be trusted for a sound patentability determination. \(^{133}\) Moreover, even if one assumes the private vendor's expertise and examiner's expertise are equivalent, \(^{134}\) one fundamental difference distinguishes the examiner from the private vendor: the patent examiner, unlike the commercial searcher, works solely for the public interest with no ulterior economic motive.

Outsourcing other government activities involving decision-making responsibility has resulted in serious government accountability problems. \(^{135}\) While there has been a recent trend towards privatization of

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131. Even judges perform their own searches to support their legal conclusions. See, \textit{e.g.}, \textit{In re Mines Tire Co.}, 194 B.R. 23, 24-25 (Bankr. W.D.N.Y. 1996). In a dispute involving whether a publicly available and searchable financing statement was seriously misleading, the court in \textit{In re Mines Tire Co.} was not satisfied with either party's search of the financial records. See \textit{id.} Consequently, the court performed its own search to settle the matter. See \textit{id.} \textit{But cf.} Drew Clark, \textit{Lawyers Amenable to Compromise on Patent Searches}, \textit{NAT. J. TECH. DAILY} (P.M. ED.), Apr. 15, 2003, at 2 (quoting Chris Katopis, Deputy Administrator for USPTO External Affairs, who compared separating examination and searching to the division of labor in a court—the jury is charged with finding facts, while the judge applies the law).

132. \textit{See THE 21ST CENTURY STRATEGIC PLAN, supra note 5, at 3. But see} Brian M. Berliner, \textit{Predicting the Future by Studying the Past: Giving an Opinion on the Patentability of an Invention}, G-715 \textit{PRACTICING LAW INSTITUTE, PREPARING PATENT LEGAL OPINIONS} 2002, at 411, 416 (2002) (noting that private searchers usually lack the attorney's level of understanding of the invention and may not appreciate its important subtleties); Grantham, \textit{supra} note 56, at 8 (distinguishing the public sector searcher (i.e., examiner) from the private sector searcher by reasoning that the private sector searcher is merely a generalist who "looks for broad teachings based on a limited disclosure," whereas an examiner is recognized as an expert who has acquired a "feel for patentability based on awareness of the historical aspect of specific art").

133. Welsh, \textit{supra note} 9, at 87.

134. While it is difficult to assess whether the private vendor's expertise matches or exceeds that of the examiner, anecdotal evidence suggests that private searchers often rely on the examiner's expertise to ensure a complete search. See, \textit{e.g.}, Berliner, \textit{supra} note 132, at 416 ("The searching agent may also consult with an \textit{e}xaminer for the relevant art unit in order to confirm that he has searched the most relevant classes and subclasses."); \textit{see also} Welsh, \textit{supra} note 9, at 84 (noting that private searchers often consult with examiners to identify the appropriate search areas); James F. Cottone, \textit{Online Patent Searching: A Good News Story, But Not the Whole Story}, 79 \textit{J. PAT. & TRADEMARK OFF. SOC'Y} 233, 235 (1997) ("Not infrequently, an \textit{e}xaminer may advise the searcher to 'be on the lookout for the Jones patent' or be sure to check the last few years (or the foreign art) in a particular class or subclass . . . or may offer other guidance that leads directly to [relevant prior art].").

135. \textit{See} Heidi Gorovitz Robertson, \textit{Legislative Innovation in State Brownfields Redevelopment Programs}, 16 \textit{J. ENVTL. L. & LITIG.} 1, 67 (2001) (noting the potential problems with the privatization of prisons); \textit{see also} Jack M. Beermann, \textit{Privatization and
certain traditional government activities, such as administering prisons and schools, courts have been cognizant of the conflict between the contractor's primary interest – the profit motive – and the public interest, including the protection of constitutional rights. Indeed, in the context of privatized prisons, the Sixth Circuit noted that the profit motive provides a greater incentive for contractors to cut costs in ways that infringe the constitutional rights of prisoners. The U.S. Supreme Court affirmed the Sixth Circuit but was noticeably silent regarding the Sixth Circuit's view on the constitutional implications of the conflict of interest. While the Supreme Court's silence may be interpreted as tacit approval, Justice Scalia's dissent noted that the majority's silence was due to its disagreement with such an "implausible" theory.

As emphasized by the Sixth Circuit, the specter of contractor cost-cutting in order to maximize profits is a very real danger in privatized activities. This danger would be particularly acute in a patent examination context. Indeed, a favorable patentability decision resulting from a private vendor's omission of the best prior art could confer significant economic advantage to the patentee. If a patent examiner conducted the search, however, his or her search judgment would be immune from pressures unique to the private sector, such as the maximization of profits, market share, and competitive advantage. This distinction is fundamental because the prior art search

_Political Accountability_, 28 FORDHAM URB. L.J. 1507, 1525 (2001) (noting that contracting out activities involving discretion and government power over individuals can raise serious issues of government accountability).


137. *See generally* Beermann, _supra_ note 135, at 1525 (discussing privately operated schools).


139. *Id.* at 424 n.4.

140. *See Richardson*, 521 U.S. at 414.

141. *See id.* at 421 (Scalia, J., dissenting).

142. *See McKnight*, 88 F.3d at 424 n.4.


144. *See Robert M. Sherwood et al., Promotion of Inventiveness in Developing Countries Through a More Advanced Patent Administration_, 39 IDEA 473, 480 (1999) (concluding that full-time patent examiners are more credible than fixed-fee contractors because contractors "may limit the time they devote to examinations, thus limiting the extent of their searches"). *See generally_ U.S. DEPARTMENT OF COMMERCE, OFFICE OF GENERAL COUNSEL, ETHICS DIVISION, _Summary of Ethics Rules, U.S. Patent and Trademark Office_ (2000), at 1, 2 (noting that employees of the USPTO are "placed in a position of trust and are held to a high standard of ethical conduct and may not participate in any matter implicating a financial conflict of interest"), available at http://www.uspto.gov/web/offices/com/advisory/acrobat/pto2000c.pdf (last visited Apr. 20, 2003);
essentially dictates the outcome of the patentability determination. While an examiner might determine that a comprehensive search requires extending the search to additional areas, including foreign art, a private vendor may be motivated to compromise the search by performing a minimal, misleading, or substandard search, or by prematurely terminating it in order to maximize profits. Given the

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GALVESTON COUNTY SMALL BUS. DEV. CENTER, *Know Your Competition and Increase Your Competitive Advantage*, at 1-3 (advising private sector businesses how to evaluate their competition and increase their competitive advantage), available at http://www.gc.edu/sbdc/articles/1998e/article5.htm (last modified July 9, 2002). The examiner's immunity from private-sector pressures has likely contributed to the perceived high quality of U.S. examiners' prior art searches. Indeed, the IP Law Section of the ABA has concluded that "U.S. examiners generally can perform the best, highest quality searches in the world." *House Hearing on USPTO Reform*, supra note 9, at 49 (2002) (statement of Charles P. Baker, Chair, Section of Intellectual Property Law, American Bar Association). But see *PTO Draft Fee Bill and Strategic Plan Draw Cool Response* at *House Hearing* 64 PAT. TRADEMARK & COPYRIGHT J. (BNA) No. 1582, July 26, 2002, at 296-97 (quoting USPTO Director James Rogan's statement that "there may be many former PTO examiners who would love to get a private salary to do patent searches").

145. *See House Hearing on USPTO Reform*, supra note 9, at 91 (statement of Ronald J. Stern, President, Patent Office Professional Association) ("The patentability determination can only be as good as the prior art on which that patentability determination is founded.").

146. *See Sherwood et al., supra* note 144, at 480 (concluding that full-time patent examiners are more credible than fixed-fee contractors because contractors "may limit the time they devote to examinations, thus limiting the extent of their searches").

147. *Caveat Inventor: Invention Marketing Scams: Hearing Before the Subcomm. on Regulation and Government Information of the Senate Comm. on Government Affairs, 103d Cong. 16, 44 (1994)* [hereinafter *Senate Hearing on Invention Promotion Companies*] (statement of Robert G. Lougher, President, Inventors Awareness Group) (presenting a striking example of a private firm's exploiting misleading search results). Mr. Loucher testified that he witnessed the firm maintain two separate patent searches for each inventor, one search suggesting the invention was patentable, while the other suggested it was unpatentable. Id. at 44. The firm would then choose the search that best fit its needs. Id.; see also *FTC, Consumer Alert: Spotting Sweet-Sounding Promises of Fraudulent Invention Promotion Firms*, July 1997 (warning consumers that "[p]atent searches by fraudulent invention promotion firms usually are incomplete, conducted in the wrong category, or unaccompanied by a legal opinion on the results of the search from a patent attorney"), available at http://www.ftc.gov/bcp/conline/pubs/alerts/invnalrt.htm (last visited Apr. 4, 2003)

148. Berliner, *supra* note 132, at 416 (admonishing patent practitioners to be wary of a private vendor’s prior art search because the search results may be substandard and produce results that give their clients the false impression that the invention is patentable).

149. *See Sherwood et al., supra* note 144, at 480 (concluding that full-time patent examiners are more credible than fixed-fee contractors because contractors "may limit the time they devote to examinations, thus limiting the extent of their searches"). Moreover, patentability searches cost about $1,100, even for search results of questionable value. *See Curtis L. Harrington, Inventive Ideas About Patent Searches*, MACHINE DESIGN, Dec. 11, 1997, at 110. However, more comprehensive searches, such as infringement and validity searches, are more expensive. *Id.* For example, infringement searches cost between
exclusive constitutional rights at stake, any negative impact on the prior art search could infringe the constitutional rights of the patent owner as well as others excluded from making, using, or selling the invention.

The Office of Management and Budget (OMB) defines an inherently governmental function as "a function which is so intimately related to the public interest as to mandate performance by [g]overnment employees." Inherently governmental functions include activities requiring the exercise of discretion or value judgment in making decisions for the Government. In view of the quasi-judicial nature of patent examination and the decision-making process inherent to the prior art search that directly affects the public interest, patent searching likely qualifies as an inherently governmental function. Thus, outsourcing the examiner's search to the private sector appears to be contrary to OMB guidelines and therefore inappropriate.

$2,000 and $10,000. Id. Also, the extent and quality of a validity search are dependent upon an analysis of the expected benefits of the search with its cost. Id. In deciding whether to terminate validity searches, clients continually compare the cost of each step of the search with the amount of royalty payment they expect to receive. Id. Interestingly, some foreign patent offices, such as Ecuador's patent office, hire local university professors to assist in patent examination. See Robert M. Sherwood, The TRIPS Agreement: Implications for Developing Countries, 37 IDEA 491, 528 (1997). However, "[t]he quality of the examination will depend on the knowledge, interest and skill of the professor, who may be happy to earn extra income, but who may not be well versed in technical examination of patent applications." Id.


151. See U.S. CONST. art. I, § 8, cl. 8. The Constitution gives Congress the authority to "secur[e] for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries." Id. Accordingly, once the patent is granted, the patentee can exclude others from making, using, or selling the invention for twenty years from the filing date of the patent application. See 35 U.S.C. §§ 154(a), 271(a) (2000); see also Lehman, supra note 58, at 21 ("[T]he patent right goes far beyond the right to prevent another from simply copying . . . . [It also] conveys the right to exclude all others from making, selling, and using the invention for [twenty] years from filing . . . .").


154. See id.

155. See id.
Conversely, the USPTO has argued that while outsourcing the search is not an optimal solution, it is nevertheless needed to shift between twenty and twenty-five percent of the examiner’s time toward improving patent quality and reducing application pendency. Moreover, an examiner could perform “a supplemental search” if the examiner determines a CSS’s search has “any kind of faulty strategy behind [it].” A deficient search, however, may not be apparent from a mere inspection of the search strategy. Indeed, it would be extremely difficult, if not impossible, to determine whether a private vendor prematurely terminated a search or whether the search was otherwise misleading for some inequitable motive. Even if an examiner conducted a “supplemental search,” it likely would not match the scope and breadth of a comprehensive patentability search in view of the examiner’s time constraints. Additionally, even if the expected five to twenty percent productivity increase were realized by shifting the examiner’s efforts away from searching, it is questionable whether such a modest productivity gain is worth the risk of potentially undermining the presumption of patent validity by granting patents based on substandard searches performed by contractors whose primary motivation is to make money, rather than serve the public interest.

156. See House Hearing on USPTO Reform, supra note 9, at 76 (“In a perfect world, our examiners would also do the searches.”).
157. See id.
158. See id. at 77.
159. See Frequently Asked Questions, supra note 7, at Q-6. According to the USPTO, the CSS will prepare both a “search abstract” and an international-style search report that will compare the prior art to the claims. Id. The USPTO concludes that the search report will save prosecution time by leading to a “quicker meeting of the minds” resulting from the examiner benefitting from the CSS’s prior art analysis and having “a better appreciation” of claim coverage. Id.
160. See Senate Hearing on Invention Promotion Companies, supra note 147, at 44 (statement of Robert G. Lougher, President, Inventors Awareness Group) (recalling witnessing an unscrupulous private invention promotion firm having two different patent searches from which it would choose to best suit its interests—one suggesting the idea was patentable and the other suggesting it was unpatentable); see also Sherwood et al., supra note 144, at 480 (stating that full-time patent examiners are more credible than fixed-fee contractors because contractors “may limit the time they devote to examinations, thus limiting the extent of their searches”); Grantham, supra note 56, at 9 (“It is unclear how the PTO would recognize a low quality prior art search if it lacks knowledge of the accumulated history of the art.”). See generally id. at 8 (“Ambiguity . . . is the hallmark of prior art searching.”).
161. See supra notes 60-68 and accompanying text. See generally Thomas, supra note 60, at 314 (discussing the time constraints imposed on patent examiners by the USPTO).
162. See House Hearing on USPTO Reform, supra note 9, at 76; see also THE 21ST CENTURY STRATEGIC PLAN, supra note 5, at 9.
B. Legislative Intent Strongly Suggests That Examiners Should Conduct the Searches


The Patent Act of 1836 established the current examination system and emphasized that examination was intended to discover previous inventions.\(^{163}\) Moreover, the Act provided a method to collect the prior art to facilitate examination.\(^{164}\) To this end, Congress appropriated funds specifically targeted to add “to the knowledge of the office” and acquire enhanced prior art research facilities.\(^{165}\) In an 1837 report, Senator Ruggles emphasized that the examiner must thoroughly investigate “all that has been known or invented” pertaining to the subject matter of the invention.\(^{166}\) Thus, Congress likely intended that examiners conduct the searches in view of the narrowly targeted appropriation for patent research, the express statements that the examiner's duties include searching, and the 165-year tradition of examiners conducting the searches since passage of the 1836 Act.\(^{167}\)

164. *Id.* at 97.
165. *Id.* at 99.
167. *See generally supra* text accompanying notes 38-39. Such apparent congressional intent suggests that the statutory term “examination” in 35 U.S.C. § 131 inherently comprises the examiner conducting the prior art search. *See generally supra* text accompanying notes 38-39. It is well settled that if congressional intent underlying the statute in question is clear, then both the agency and the courts must defer to Congress' position. *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842-43 (1984). However, if Congress is silent or ambiguous, then the court must defer to the agency’s reasonable interpretation. *Id.* A court may not substitute its own construction for the agency's reasonable interpretation, even if the court would have reached a different conclusion. *Id.* at 844. Thus, under *Chevron*, if Congress intended for the statutory term “examination” to include both the patentability determination and the prior art search, both the courts and the agency would have to defer to the position consistent with Congress' intent. *See id.* However, even if Congress was completely silent or ambiguous regarding its underlying intent, courts could hold that any change in the USPTO's interpretation of “examination” (i.e., from examiners conducting the search for over 165 years to examiners not performing the search) would be unreasonable under *Chevron*. *See id.* While “[a]n initial agency interpretation is not carved in stone,” the agency must nevertheless justify its change with a “reasoned analysis.” *Id.* at 863-64; *see also* Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 57 (1983). Moreover, the determination of whether an agency's interpretation is reasonable turns on the compatibility of the inquiry with the underlying congressional purposes informing the measure. Con'l Air Lines, Inc. v. Dep’t of Transp., 843 F.2d 1444, 1449 (D.C. Cir. 1988). Here, the agency's reasoned analysis for changing its interpretation of “examination” presumably is set forth in the *Strategic Plan*, namely the expected benefits to quality,
Preserving the Presumption of Patent Validity


In the report accompanying H.R. 2047, the Judiciary Committee directed the USPTO to eliminate any examiner's tasks that can be handled by "administrative staff." Additionally, the committee suggested that the agency rely on earlier search and examination results solely from the EPO for efficiency reasons. The USPTO was also instructed to consider using contractors to assist examiners in performing "administrative tasks." The Committee, however, did not define the ambiguous phrase, "administrative tasks." Nevertheless, it is reasonable to assume Congress' intent would be consistent with the OMB mandate requiring that governmental functions be performed by government employees. OMB has listed numerous examples of commercial activities suitable for outsourcing. The listed tasks, however, are merely ministerial and are not reasonably analogous

pendency, and cost-effectiveness. See THE 21ST CENTURY STRATEGIC PLAN, supra note 5, at 3. Despite these laudable goals, it is unclear whether courts would view this justification as a sufficiently reasoned analysis to pass muster under State Farm and Chevron. See Chevron, 467 U.S. at 863; State Farm, 463 U.S. at 57. Courts might view the potential detrimental impact on the presumption of validity, certainty, and the public perception of the patent system as far outweighing the expected quality, pendency, and cost-effectiveness benefits, if any, realized by the agency. Moreover, the underlying congressional purpose informing the measure is the establishment of an examination system that grants presumptively valid patents whose validity ultimately depends on thorough prior art searches. See supra Part I.A. As noted in Part III.B.2 infra, Congress narrowly limited its directive to the USPTO to explore taking advantage of search results only from the EPO. See H.R. REP. NO. 107-190, at 6 (2001). Indeed, Congress was noticeably silent about using searches from the private sector. Therefore, if legally challenged, outsourcing prior art searches to private vendors may not be viewed as reasonably consistent with Congress' purpose and therefore could be held unreasonable under Chevron.

169. See id.
170. Id.
171. See id.
Furthermore, while Congress mentioned relying on earlier search and examination results from the EPO, Congress refrained from suggesting similar reliance on searches from commercial vendors. Thus, by negative implication, Congress expressed disapproval of such outsourcing. Instead, Congress merely advised the USPTO to consider outsourcing “administrative tasks” to contract personnel. In view of Congress’ narrow directive, the USPTO’s apparent interpretation of “administrative tasks” to include prior art searching arguably oversteps the scope of the mandate.

The categories of tasks listed in the circular that are most relevant are: (1) “Office and Administrative Services,” (2) “Special Studies and Analyses,” and (3) “Other Services.” The tasks listed in the first category are limited to ministerial and clerical functions. Under the second category, the closest tasks are “scientific data studies” and “legal/litigation studies.” Even with the broadest reasonable interpretation of such studies, it is unlikely that a prior art search upon which patentability depends would be envisioned by a “legal/litigation” or “scientific data” study. Litigation studies and scientific data studies are predominantly statistical in nature and, unlike patent examination, do not require quasi-judicial analysis and opinions affecting the public interest. See generally supra notes 110-111 and accompanying text. The final category, “Other Services,” does not contemplate an activity reasonably related to a prior art search. Office of Management & Budget, Circular No. A-76, at Attachment A, Aug. 4, 1983 (Rev. 1999). Therefore, interpreting “administrative tasks” in light of the circular strongly suggests that Congress did not intend to have the agency outsource the prior art search to commercial vendors. Also, the statutory exceptions to “inherently governmental functions” provided in the Federal Activities Inventory Reform Act of 1998 do not reasonably apply to a prior art search upon which a patentability determination depends. See Federal Activities Inventory Reform Act of 1998, Pub. L. No. 105-270 § 5(2)(C), 112 Stat. 2382, 2385 (codified as amended at 31 U.S.C. § 501 note (2000)). The closest exception is for “gathering information for or providing advice, opinions, recommendations, or ideas to [f]ederal [g]overnment officials.” However, “gathering information” would not reasonably contemplate a prior art search for a quasi-judicial patentability determination in view of the decision-making function inherent to the search. Moreover, as will be explained in Part III.D infra, the search and the examination functions are inextricably intertwined and cannot be reasonably separated.


In fact, Rep. John Conyers of the Subcommittee on Courts, the Internet, and Intellectual Property of the House Judiciary Committee expressed concern with the USPTO’s outsourcing proposal. See House Hearing on USPTO Reform, supra note 9, at 84 (statement of Rep. John Conyers, Jr., Mich.). Rep. Conyers concluded that “conducting thorough searches is an integral part of the PTO’s examination role.” Moreover, he expressed uncertainty regarding “how [Congress and the USPTO] would ensure that every search on every application was thoroughly done by the contractors.”

Id.

This conclusion holds despite previous efforts on the part of various government agencies to outsource legal services, including patent searching. For example, the Department of the Air Force, the Department of the Army, the Department of Health &
Nevertheless, proponents of outsourcing searches have argued that it is a viable option for several reasons. First, because applicants frequently use private search firms to assess the prior art before filing patent applications, outsourcing the search merely institutionalizes that practice. Because the quality and extent of private searches vary widely among vendors, however, some commercial “state-of-the-art” searches are of questionable value. Secondly, outsourcing proponents note that the EPO had at one time employed a split search and examination process. However, the EPO has recognized the problems inherent in such a system and is currently abandoning this approach through implementation of BEST. Proponents of outsourcing searches further argue that U.S. patents are sometimes later invalidated due to prior art found by private search firms. Such “validity searches” are extremely exhaustive investigations conducted primarily for litigation purposes, span several weeks, and consider every possible relevant publication—no matter how remote. In addition, such searches are

Human Services, and the Department of the Interior have all outsourced patent searches in connection with legal services. See William V. Luneburg, Contracting By the Federal Government for Legal Services: A Legal and Empirical Analysis, 63 NOTRE DAME L. REV. 399, 471-77 app. A (1988). Such general, “state-of-the-art” patent searches, however, are not necessarily commensurate with the comprehensive search conducted by a patent examiner upon which a quasi-judicial patentability decision depends. See supra notes 132-134 and accompanying text. Moreover, an applicant does not have a duty to conduct a prior art search at all, much less a search of sufficient rigor and thoroughness upon which an examiner's patentability decision depends. See MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 609, at 600-718 (“There is no requirement that an applicant for a patent make a patentability search.”); see also FMC Corp. v. Hennessy Indus., Inc., 836 F.2d 521, 526 n.6 (Fed. Cir. 1987) (“As a general rule, there is no duty to conduct a prior art search, and thus there is no duty to disclose art of which an applicant could have been aware.”).

179. See, e.g., House Hearing on USPTO Reform, supra note 9, at 126 (statement of Joseph L. Ebersole, Counsel, Coalition for Patent and Trademark Information Dissemination).

180. Id.

181. See supra note 144.

182. House Hearing on USPTO Reform, supra note 9, at 126 (statement of Joseph L. Ebersole, Counsel, Coalition for Patent and Trademark Information Dissemination).

183. See Part II.A supra.

184. House Hearing on USPTO Reform, supra note 9, at 126 (statement of Joseph L. Ebersole, Counsel, Coalition for Patent and Trademark Information Dissemination).

185. See S. JUDICIARY COMM. STUDY NO. 29, supra note 47, at 14 (noting that the USPTO cannot undertake a “validity search” of several weeks' duration, which includes an inspection of every possible publication, no matter how remote). In fact, clients are only willing to spend limited sums on patentability searches; however, they are willing to spend thousands of dollars for validity searches. See Welsh, supra note 9, at 77. Indeed, the time spent conducting a patentability search is only a fraction of the time spent conducting a validity search. See id.
neither practical nor expected by a government agency with limited resources and an ever-increasing application backlog.  

C. What Will Be the Effect on the Validity Presumption and Public Confidence in Patents Searched by a Decertified CSS?

In his testimony to Congress, a representative of the IP Law Section of the ABA noted, "If the [e]xaminer does not do the search, it will not be done as well, which would weaken the presumption of . . . validity." Concern has also been expressed regarding the effect on the validity presumption for patents searched by a CSS that is later decertified by the USPTO. The situation appears analogous to obtaining a degree from a university, which, although accredited at the time of graduation, later loses its accreditation. Although the degree was conferred by an accredited institution, the negative impact of the institution’s subsequent loss of accreditation would inevitably affect the perceived value of the degree.

A similar type of negative public perception could taint an otherwise valid patent searched by a later-decertified CSS. If the presumption of validity is weakened, the patent’s certainty is also weakened, a fact which can ultimately affect investor confidence and investment in new technology. Thus, even if a patent’s presumption of validity is legally unaffected if searched by a later-decertified CSS, the negative public perception attached to such patents could have a detrimental impact on investor confidence in those patents.

D. The Search and Examination Functions Are Inextricably Intertwined

The prior art search process necessarily involves a substantive examination. For example, an examiner’s statutory obviousness

188. Id. at 49-50.
189. Id. at 49 (concluding that the public would have little confidence in a private sector search firm tasked with protecting the public interest).
190. See id. at 44; see also Lehman, supra note 58, at 21 ("[I]nvestors who provide much-needed capital to innovators on the basis of patents act under the assumption that patents granted in the United States have been properly examined and can be presumed to be valid in the event of a challenge.").
191. See Lehman, supra note 58, at 21 ("The quality and trustworthiness of the examination system is at the core of investor confidence in many high-tech companies."). Cf. House Hearing on Patent Quality, supra note 9, at 26 (statement of David Martin, Chief Executive Officer of M-CAM, Inc.) (noting that investors in one company lost over $330 million in one day due to its reliance on U.S. patents later found invalid because of overlooked prior art during examination).
determination' relies heavily upon the iterative decision-making process that occurs during a prior art search. When a certain feature becomes important during a search, "the [e]xaminer can adjust the search accordingly to find the best art with respect to that element." Moreover, when formulating obviousness rejections, U.S. examiners must find each element of an inventive combination in the prior art and a motivation to combine various features—a requirement unique to U.S. patent law. While a private searcher may find individual claimed features, the searcher may not find the subtle teachings to combine the features critical to a sound obviousness decision. Indeed, many private

192. See 35 U.S.C. § 103(a) (2000). In determining obviousness, examiners must: (1) determine the scope and content of the prior art; (2) ascertain the differences between the prior art and the claims at issue; (3) resolve the level of ordinary skill in the art; and (4) evaluate evidence of secondary considerations suggesting nonobviousness. See Graham v. John Deere Co., 383 U.S. 1, 17 (1966). Moreover, examiners must apply 35 U.S.C. § 103 in light of the following factors: (1) the claimed invention must be considered in its entirety; (2) the references must be evaluated as a whole and must suggest the obviousness of making the combination; (3) the references must be viewed without hindsight afforded by the claimed invention; and (4) obviousness must be viewed under the standard of a reasonable expectation of success. Hodosh v. Block Drug Co., 786 F.2d 1136, 1143 n.5 (Fed. Cir. 1986).


194. Id.

195. Id. See generally In re Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998) ("This court has identified three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.").

196. House Hearing on USPTO Reform, supra note 9, at 49 (statement of Charles P. Baker, Chair, Intellectual Property Law Section, American Bar Association). Also, the Federal Circuit has held that a "trend" in the prior art may be a significant factor in obviousness determinations. See Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH, 139 F.3d 877, 881 (Fed. Cir. 1998). In fact, a trend in the art may provide sufficient suggestion to modify a prior art reference in accordance with the trend. Id. Because examiners have unparalleled experience searching and examining patent applications in specialized technology areas on a daily basis, examiners would be particularly cognizant of trends in their respective arts. See infra Part IV.A. See generally supra notes 39-42 and accompanying text. Furthermore, deciding whether it is obvious to combine references involves a factual inquiry that must be "thorough and searching." McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1351-52 (Fed. Cir. 2001). This factual inquiry is dependent upon the level of ordinary skill in the art to which the invention pertains. Id. at 1351. The court further explained:

Where the level of skill is high, one may assume a keener appreciation of nuances taught by the prior art. Similarly, appreciation of the differences between the claims in suit and the scope of prior art references—a matter itself informed by the operative level of skill in the art—informs the question of whether to combine prior art references.
searchers have little or no knowledge of patent law.\textsuperscript{197} Even if one assumes that private searchers are aware of the statutory obviousness standards, under the \textit{Strategic Plan}, private firms would not actually decide patentability with the public interest in mind.\textsuperscript{198} In addition, it is unlikely that private firms would be privy to certain evidence in the record, including compelling arguments and data, which could suggest the impropriety of combining certain references.\textsuperscript{199}

Furthermore, the very nature of \textit{ex parte} prosecution\textsuperscript{200} is inherently biased in favor of the applicant,\textsuperscript{201} which renders outsourcing searches to private vendors inappropriate. Continued reiteration of views favorable to the applicant during \textit{ex parte} prosecution inevitably pressures

\textit{Id.} Thus, the level of skill in the art and the appreciation of the differences between the claimed subject matter and the scope of the prior art are factors that directly influence the question of whether to combine references. \textit{See id.} As noted by one commentator, private searchers tend to be generalists while examiners are generally accepted as experts in their respective arts. \textit{See Grantham, supra} note 56, at 8 (characterizing the private sector searcher as a generalist who "looks for broad teachings based on a limited disclosure," whereas an examiner is recognized as an expert who has acquired a "feel for patentability based on awareness of the historical aspect of specific art"). Therefore, unlike an examiner, a generalist may not have the requisite skill in the art or knowledge of its evolution to appreciate its nuances fully. \textit{See id.} As a result, a private searcher may not possess the skill needed to decide whether it would be obvious to combine certain references while conducting a prior art search. \textit{See id.} Consequently, in the process of searching, the private searcher may simply dismiss, and therefore not retrieve, patents that an examiner would find critical to justify combining certain references. \textit{See generally Welsh, supra} note 9, at 90 (noting that "many searches are merely ‘farmed out’ to individuals having little, or no, true knowledge of [patent law]").

\textsuperscript{197} \textit{See Welsh, supra} note 9, at 89-90.

\textsuperscript{198} \textit{See generally Lindsey v. United States, 778 F.2d 1143, 1145-46 (5th Cir. 1985)} (noting that the examiner's patentability determination necessarily involves decision-making that weighs "considerations of social, economic, and political policy"); \textit{see also S. JUDICIARY COMM. STUDY No. 29, supra} note 47, at 26 (noting that because there is no general advocate for the public interest, "[t]he examiner must act as a court of original jurisdiction and at the same time protect the public interest against the grant of invalid patents as well as patents of unduly broad scope"); \textit{Smith, supra} note 122, at 169 ("[T]he examiner's] client is the public at large.").

\textsuperscript{199} \textit{See 35 U.S.C. § 122(a) (2000)} (mandating that patent applications be kept confidential by the USPTO). Moreover, examiners must evaluate evidence in the record of secondary considerations suggesting nonobviousness. \textit{See, e.g., Graham v. John Deere Co., 383 U.S. 1, 17-18 (1966).} In view of the confidentiality of this evidence, it would therefore likely be known only by the patent applicant, the applicant's representative, and the USPTO. \textit{See 35 U.S.C. § 122(a) (2000). \textit{See generally In re Oetiker, 977 F.2d 1443, 1445 (Fed. Cir. 1992)}} ("[P]atentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument.").

\textsuperscript{200} \textit{See supra} note 29 (describing the \textit{ex parte} procedure).

\textsuperscript{201} \textit{See S. JUDICIARY COMM. STUDY No. 29, supra} note 47, at 26-27.
examiners to allow the application. This inherent bias is counterbalanced, however, by the challenge of discovering the best prior art and is a source of genuine satisfaction for examiners. Examiners routinely meet this challenge by exercising their best efforts to discover compelling references that disclose the claimed limitations. Moreover, the check and balance function of the examiner's search neutralizes any potential misrepresentations made by the applicant about the scope and content of the prior art. Without the check and balance system, the inherent bias favoring the applicant might unduly influence the examiner's decision to allow an otherwise unpatentable invention.

Additionally, the EPO's BEST program strongly suggests that searching the prior art is an essential component of examination. In 1993, the EPO abandoned a split search and examination system in favor of a combined system. To date, BEST's demonstrated success has motivated the EPO to fully implement the program between 2004 and 2006. Thus, the success of the combined system strongly suggests that combining the search and examining functions is fundamental to efficient and consistent examination.

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202. *Id.*; see also *Lemley, supra* note 24, at 1496 n.3 (arguing that examiners "have a strong incentive to issue patents to persistent applicants, rather than to continue rejecting the application").

203. See *S. JUDICIARY COMM. STUDY NO. 29, supra* note 47, at 27. *But see Wegner, supra* note 73, at 6 n.3 ("Historically, one of the negatives of the job of a [p]atent [e]xaminer has been the large amount of time required for searching for prior art, a mind-numbing task of minimal intellectual stimulation, at best.").

204. *S. JUDICIARY COMM. STUDY NO. 29, supra* note 47, at 27.

205. See *Dienner, supra* note 15, at 153-54 (noting that the examiner's own search functions as a "check upon the applicant's representations as to the prior art"); see also *Berliner, supra* note 132, at 416 (warning that a substandard search performed by a private searcher may give the applicant a "false impression" that the invention is patentable).

206. *Marandon, supra* note 80, §§ 1-2.1; see also *House Hearing on USPTO Reform, supra* note 9, at 50 (statement of Charles P. Baker, Chair, Intellectual Property Law Section, American Bar Association) ("The best testament against separating the search function and an examination function is the fact the European Patent Office, which has had such a system for years, has recently decided to abandon it."); *McDonald, supra* note 87, at 467 (noting that the BEST project "has been expanded with positive results").

207. See *Marandon, supra* note 80, § 1.

208. See *supra* note 88 and accompanying text.

209. *But see JAPAN PATENT OFFICE (JPO), The Roles of Bodies Supporting the Development of Industrial Property System, at 20-21, 34 (describing the JPO's establishment of the Industrial Property Cooperation Center (IPCC) as a search organization to assist the agency by conducting prior art searches on behalf of examiners), available at* http://www.apic.jiii.or.jp/facility/text/6-02.pdf (last visited Apr. 20, 2003) [hereinafter JPO, *Supporting the Development of Industrial Property System*]. While the official Japanese examination guidelines state that the examiner should carry out the prior art search, JPO examiners nevertheless rely on the IPCC's search results. *See JPO, Examination Guidelines, supra* note 73, at 3-5. Although originally created to build and
It could be argued that the split search and examination system worked satisfactorily for the EPO prior to BEST. Thus, according to this contrary view, the EPO adopted BEST merely to increase productivity and efficiency, not to improve search quality. BEST was implemented, however, with search quality enhancements in mind.

A noted advantage of BEST is the elimination of the inevitable inconsistencies encountered when multiple examiners are involved in the examination process. For example, BEST reduces the risk "that a substantive examiner will cite an additional document not cited by the search examiner" and eliminates any chance of a "sudden divergence of opinion" between the search and substantive examiners. This benefit enhances search quality. Additionally, BEST eliminates the possibility that the substantive examiner might view the search examiner's work as inadequate and simply dismiss the search examiner's prior art or analysis. When the substantive examiner also performs the search, however, the cited prior art will inevitably match the substantive examiner's reasoning and analysis.

E. The Practical Consequences of Outsourcing the Prior Art Search Could Actually Diminish the Efficiency Benefits Sought To Be Achieved by the Strategic Plan

Even if it were legally appropriate to outsource the prior art search, the patent system could suffer adverse practical consequences. For example, substantial prosecution delays and additional costs could result from examiners' increased use of Rule 105 to obtain additional

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210. See supra note 209 (discussing the quality of the Japanese split search and examination procedure).
211. Marandon, supra note 80, § 2.
212. Id. § 2.4.
213. Id.
214. Id.
215. See, e.g., MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 704.01, at 700-06 (noting that while full faith and credit should be given to a previous examiner's work, an examiner should not defer to the previous examiner if "there is a clear error in the previous action or knowledge of other prior art.")
216. See Marandon, supra note 80, § 2.4.
information deemed "reasonably necessary" for examination. Currently, examiners rarely invoke Rule 105 because its use is governed by policies established by each USPTO Technology Center. Typically, the USPTO limits the use of Rule 105 to applications that disclose technology not readily found in patents, but more likely to appear in commercial databases.

Therefore, if required to rely on private-vendor searches for patentability decisions, any examiner, regardless of technology area, could routinely invoke Rule 105. If an examiner believed that the commercial prior art search failed to meet the minimum quality threshold for proper examination, the examiner could simply invoke Rule 105. While arguably such a system would enhance search quality, it is unclear whether any search quality enhancements would justify the practical consequences. Such a system might impose delays in prosecution and increase applicants' costs in the event that an examiner required additional searching.

217. See Thomas, supra note 124, at 749-50.
218. Changes to Implement the Patent Business Goals, 65 Fed. Reg. 54,604, 54,634 (Sept. 8, 2000) (to be codified at 37 C.F.R. pts 1, 3, 5, & 10). But see Thomas, supra note 124, at 749-50 (suggesting that Rule 105 is used sparingly because to do otherwise would require expending scarce resources and would be repugnant to the examiner's incentive structure).
219. Changes to Implement the Patent Business Goals, 65 Fed. Reg. 54,604, 54,633-35 (Sept. 8, 2000) (to be codified at 37 C.F.R. pts 1, 3, 5, & 10); see also Thomas, supra note 124, at 749 ("Few patent attorneys have faced a Rule 105 request because examiners appear reluctant to make them.").
220. See 37 C.F.R. § 1.105 (2002); see also MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 704.11(b), at 700-08.
221. See Changes to Implement the Patent Business Goals, 65 Fed. Reg. at 54,633 (noting that the use of Rule 105 by USPTO employees is encouraged "so that the Office can perform the best quality examination possible"); see also 37 C.F.R. § 1.105 (2002); Frequently Asked Questions, supra note 7, at Q-12 (noting that examiners may use their authority under Rule 105 to obtain supplemental information from the applicant when a supplemental search is needed in view of claim amendments or omission of material cites); 37 C.F.R. § 1.105 (2002); MANUAL OF PATENT EXAMINING PROCEDURE, supra note 15, § 704.11(b), at 700-08.
223. See id. (noting that one objection to proposed Rule 105 was that it would "slow the examination process").
224. See generally Lemley, supra note 24, at 1510 (estimating that "requiring prior art searches would add between $8,000 and $10,000 to the cost of patent prosecution in most cases"). But see Kent Hoover, Inventors Fight Outsourcing Searches for New Patents, BUS. J. TAMPA BAY, July 29, 2002 (estimating the fee for hiring a private search firm to be $1,000), available at http://tampabay.bizjournals.com/tampabay/stories/2002/07/29/story6. html (last visited Jan. 31, 2003). But cf. House Hearing on USPTO Reform, supra note 9, at 127 (statement of Joseph L. Ebersole, Counsel, Coalition for Patent and Trademark Information Dissemination) (arguing that outsourcing searches could reduce costs to the
In addition, an examiner who relies on outsourced searches might depend more heavily on "official notice" as a matter of practicality.\textsuperscript{225} Currently, an examiner may take official notice "of facts beyond the record which . . . are capable of such instant and unquestionable demonstration as to defy dispute."\textsuperscript{226} Therefore, if from experience, an examiner believes that pertinent prior art is lacking from the commercial search, an examiner might take official notice of the omission rather than require the applicant to provide a reference. Official notice would be a more expedient measure compared to imposing additional burdens on the applicant under Rule 105.\textsuperscript{227} Recent Federal Circuit decisions, however, disfavor official notice. Consequently, if examiners increasingly resort to official notice, their patentability decisions may frequently be reversed on appeal.

IV. A THREE-PRONGED ALTERNATIVE TO OUTSOURCING

Despite the aforementioned problems with outsourcing prior art searches, contracting out certain limited search activities to private vendors has promise. Used in concert with the examiner's expertise in searching patents, the expertise of a CSS in searching non-patent literature could greatly enhance and complement the examiner's efforts, resulting in a more comprehensive search and, ultimately, a stronger patent. Accordingly, the following prior art search regimen for every application is suggested: (1) examiners should possess the ultimate responsibility to search all prior art, including U.S. and foreign patents; (2) a CSS would be utilized in every case with the responsibility to search

\textsuperscript{225} Lance Leonard Barry, Did You Ever Notice? Official Notice in Rejections, 81 J. PAT. & TRADEMARK OFF. SOC'Y 129, 131 (1999) (justifying the examiner's use of official notice because it enables "the examiner to use time efficiently to make a speedy and just determination of issues . . . [and . . .] free[s] the examiner from having to spend unnecessary time finding a reference to prove the existence of a fact well known at the time of an invention").

\textsuperscript{226} In re Ahlert, 424 F.2d 1088, 1091 (C.C.P.A. 1970). \textit{But see} In re Eynde, 480 F.2d 1364, 1370 (C.C.P.A. 1973) ("The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amenable to the taking of [judicial] notice.").

\textsuperscript{227} See Barry, supra note 225, at 131 (justifying the examiner's use of official notice for greater efficiency and practicality).

\textsuperscript{228} See Thomas, supra note 124, at 753 (noting that "[r]ecent Federal Circuit case law suggests that the USPTO may have to reduce its reliance upon official notice"); see also House Hearing on Patent Quality, supra note 9, at 23 (statement of Jeffrey P. Kushan, Partner, Powell, Goldstein, Frazer, & Murphy, LLP) (noting that examiners rarely invoke official notice because the applicant can negate its substance by simply challenging the examiner to produce evidence supporting his assertion).
non-patent literature; and (3) all applications should have an automated search performed, utilizing comprehensive, state-of-the-art text, linguistics, and image-analysis capabilities.

A. The U.S. Patent Examiner Is Best Suited To Conduct the Patent Search

According to the IP Law Section of the ABA, U.S. examiners "perform the best, highest quality searches in the world."\(^{229}\) This search expertise stems largely from examiners' highly specialized knowledge and experience,\(^ {230}\) which span over 1200 technology classifications.\(^ {231}\) The

\(^{229}\) *House Hearing on USPTO Reform*, supra note 9, at 49 (statement of Charles P. Baker, Chair, Intellectual Property Law Section, American Bar Association); see also Sherwood et al., *supra* note 144, at 480 ("[P]atent office examiners offer a greater likelihood of high-quality examination [than outside contractors] because they have been trained to conduct examinations, and it is the only work they do."). Moreover, full-time patent examiners have a higher level of credibility than outside contractors because contractors "will be only as good as their familiarity with search techniques and their access to the world's body of scientific and technical information." Id. But see Lemley, *supra* note 24, at 1528 (noting that examiners "regularly miss the most relevant prior art"); *Frequently Asked Questions*, supra note 7, at Q-9 (concluding that when the Office of Patent Quality Review (OPQR) needs to reopen an application to make a prior art rejection, over fifty percent of such occurrences were due to the discovery of new prior art by reviewers who are generalists); *House Hearing on Patent Quality*, supra note 9, at 61 (statement of Michael K. Kirk, Executive Director, American Intellectual Property Law Association) ("[E]xaminers sometimes don't find the best prior art, and sometimes when they do, their judgments are [a] little bit short"); Wegner, *supra* note 64, at 337-38 (concluding that the European search is "the best in the world" in view of the "brilliant" searches performed by the treaty-based corps of EPO career examiners).

\(^{230}\) See *Welsh*, supra note 9, at 80 (stating that "[e]xaminers ... are experts in the art"); see also *House Hearing on USPTO Reform*, supra note 9, at 89 (statement of Ronald J. Stern, President, Patent Office Professional Association) ("[A]n examiner continues to search in a particular technology area, the examiner becomes more and more familiar with the prior art in that technology and they develop "such a level of expertise that they are regarded as experts in their technologies both within and outside the USPTO."). *Cf.* Sherwood et al., *supra* note 144, at 480 (concluding that because few people are acquainted with more than one field of technology, a competent examination system requires at least one examiner for each technical field, thus requiring a minimum of 200 examiners to examine all technology areas adequately). But see Grantham, *supra* note 56, at 9 (concluding that the USPTO is gradually losing its "expert edge" resulting from the agency's increased emphasis on faster application processing and text search techniques). Moreover, the retirement of "old school" examiners with extensive accumulated knowledge of the art is diminishing institutional expertise. Id. While much of the evidence is anecdotal, there appears to be a perception among some public searchers of a general decline in examiner search expertise. *See, e.g.*, Randy Rabin, *If You Come to the USPTO to Work, Bring Your Own Desk*, INTELL. PROP. TODAY, May 2002, at 60. Randy Rabin, a professional patent searcher, observes:

In years past, consulting an examiner for help on a search typically led him or her to instantly point to appropriate subclasses, and often a visit to the shoes [patent files] to see the very patents brought to mind. More recently, searchers who regularly consult examiners have commented on what they sense as a loss of expertise on the part of examiners. Now, an examiner turns 90 degrees to his
volume and scope of examiner expertise encompass the entire spectrum of human inventive effort.\textsuperscript{232} Such breadth and volume of technological expertise are unlikely to be matched by any single private company.\textsuperscript{233}

Also, the USPTO is currently more likely to find documents that the agency itself generates.\textsuperscript{234} During prosecution, examiners can draw

\begin{quote}
computer, sometimes appearing as perplexed as his visitor, and begins to perform what might be a duplicate of the text search his hopeful visitor has already tried.
\end{quote}

\textit{Id.}

\textsuperscript{231} See Allison & Lemley, \textit{supra} note 128, at 92 (noting the USPTO's classification scheme has over 1200 categories); see also House Hearing on USPTO Reform, \textit{supra} note 9, at 126 (statement of Joseph L. Ebersole, Counsel, Coalition for Patent and Trademark Information Dissemination) (noting that the USPTO "has the greatest single concentration of technical expertise that exists anywhere in the world"); Cockburn, \textit{supra} note 26, at 4 (noting that the USPTO receives "more certified mail each day than any other single organization in the world" and "is staffed by over 3000 patent examiners" and stating that the work allocation at the USPTO promotes specialization and that individual examiners "may be responsible for nearly all of the applications within specific classes or subclasses"). \textit{But see Frequently Asked Questions, supra note 7, at Q-9} (noting that, unlike examiners, reviewers from the Office of Patent Quality Review (OPQR) are generalists who have shown they can search as well as examiners, evidenced by the fact that over fifty percent of applications that were reopened due to claim rejections over prior art were due to the discovery of new prior art found by OPQR reviewers).

\textsuperscript{232} See House Hearing on USPTO Reform, \textit{supra} note 9, at 89 (statement of Ronald J. Stern, President, Patent Office Professional Association) ("Where else can one find a single collection of engineers and scientists with the collective expertise to examine anything from safety pins to atom bombs; from fishing lures to genetically engineered plants and animals?"). \textit{But see Frequently Asked Questions, supra note 7, at Q-9} (noting that in Japan, the Industrial Property Cooperation Center (IPCC) conducts over 100,000 searches per year for examiners and consists of industry professionals—not former examiners—thereby suggesting that a similar large, untapped resource of private industry professionals exists in the United States who could conduct searches for U.S. examiners).

\textsuperscript{233} See House Hearing on USPTO Reform, \textit{supra} note 9, at 89 (statement of Ronald J. Stern, President, Patent Office Professional Association) ("The USPTO represents the single largest accumulation of technological expertise in the federal government."); David Testardi, \textit{Comments on 21st Century Strategic Plan}, at 3 (suggesting that "[t]he Examiners who work day-in and day-out in a particular technology are the most qualified to perform the International Search" because, unlike private contractors, examiners possess a greater depth of technological understanding and historical knowledge of the art that comes from experience), at http://home.earthlink.net/~datestardi/comments.pdf (last visited Jan. 31, 2003). In fact, one commentator even proposed the remarkable idea of the USPTO capitalizing on the search expertise of its examiners by selling fee-based searches to the public as a profit-generating enterprise. \textit{See} Harry Jacobson, \textit{Commentaria, Official Searches by Patent Office}, 36 J. PAT. OFF. SOC'Y 750, 750-51 (1954). \textit{But see House Hearing on USPTO Reform, supra note 9, at 170} (2002) (statement of Joseph L. Ebersole, Counsel, Coalition for Patent and Trademark Information Dissemination) (arguing that while no private sector organization would match the breadth of U.S. examiner expertise, that mismatch should not be a reason to prohibit outsourcing searches but should merely be one of the facts considered for certification requirements and training).

\textsuperscript{234} Allison & Lemley, \textit{supra} note 128, at 102.
upon their knowledge of patents that they previously examined, particularly in highly specialized areas. Therefore, in view of the breadth of examiner technological expertise, the strong link between the search and patentability determination, and the greater likelihood of the examiner finding relevant patents, the U.S. examiner is best suited to conduct the patent search.

B. The Use of a CSS Should Be Limited and Should Focus Primarily on Non-Patent Literature

The CSS search should not be a substitute for an examiner's search. Instead, the examiner should continue to conduct the entire prior art search. Thus, the CSS search would serve merely as an enhancement to the examiner's search.

The limited use of a CSS would be a boon to examiners, particularly for technologies where the prior art is predominantly non-patent literature. For example, a CSS's findings could relieve the examiner's burden of finding inventive features in obscure non-patent documents and could suggest additional search areas. Moreover, the search results that a CSS submits to the examiner might serve as a starting point for finding additional prior art that teaches combining references critical to obviousness decisions. Such subtle teaching references might not be apparent to a CSS searcher. Lastly, the examiner could combine the CSS's expertise in searching non-patent literature with the examiner's expertise in searching patents. The combined expertise of examiners and CSSs would likely result in a more comprehensive search and, ultimately, a stronger patent.

C. Every Application Should Be Subjected to an Automated Search Tantamount to Data Mining

In addition to the search efforts of the examiner and the CSS, the USPTO should automatically search every application using the most effective, state-of-the-art text, linguistics, and image-analysis technology

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236. House Hearing on USPTO Reform, supra note 9, at 49 (statement of Charles P. Baker, Chair, Intellectual Property Law Section, American Bar Association).
237. See Cockburn, supra note 26, at 6 (noting that the extent to which examiners search non-patent literature "may be a function of the nature of the technology, maturity of the field, and the ease with which it can be searched"). But see Allison & Lemley, supra note 128, at 138 (concluding that computer searching may explain why examiners cite ten times as much non-patent prior art as they did in the 1970s).
238. See King, supra note 25, at 22 (concluding that if examination quality increases, the risk of expensive litigation will decrease in view of fewer patents subjected to court review).
Such an automated system should include a computerized analysis of the text and figures of a patent application, an automatic computerized database search based on that text and image analysis, and automatic retrieval of the most relevant documents for consideration. This system would utilize the expertise of both the examiner and the CSS and take advantage of sophisticated technology to locate automatically prior art that is otherwise impossible or impractical to find. Essentially, the automated search component would be a data mining operation, maximizing the chance of finding obscure documents not readily found using conventional search methods.

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239. See Liza Vertinsky & Todd M. Rice, Thinking About Thinking Machines: Implications of Machine Inventors for Patent Law, 8 B.U. J. SCI. & TECH. L. 574, 607-08 (2002) (proposing that the USPTO utilize the search and pattern recognition capabilities of computers for searching and prior art analysis); see also Elizabeth D. Liddy & Michael L. Weiner, Intelligent Text Processing and Intelligence Tradecraft, J. ASS'N FOR GLOBAL STRATEGIC INFO. (1995), at 7 (concluding that if the patent office had access to a powerful, linguistically informed search system able to overcome complexities and ambiguities of language, all applications should be subjected to such a search), available at http://www.damas.ift.ulaval.ca/-coursIA2/Fichiers/itextpro.pdf (last visited Sept. 28, 2002) (on file with author); Thomas, supra note 124, at 757 (“Patent searching should become increasingly automated and its results presented to the applicant prior to the First Office Action.”).

240. See Liddy & Weiner, supra note 239, at 7. A sufficiently powerful automated search tool could search “not only newspapers, journals, magazine[s], abstracts, and bibliographies, but also entire reference books, specialized encyclopedias, and even the plethora of doctoral dissertations . . . . These all represent significant amounts of prior art that we know may exist . . . but ha[ve] been heretofore impractical to search.” Id.; see also Lehman, supra note 58, at 23 (“Clearly, what is needed is a single database of all the relevant existing publications, and an engine superior to anything now in use to search this database . . . [using] artificial intelligence attributes not currently available in the search technologies employed by the USPTO, the EPO, or the JPO.”); Schwartz, supra note 46, at 808 (arguing that a “mechanized” search will strengthen the presumption of validity because the extension of the field of search will eliminate the possibility of missing pertinent art); Thermo King Corp. v. White's Trucking Serv., Inc., 292 F.2d 668, 676 n.11 (5th Cir. 1961) (conceding the impossibility of manually searching the USPTO patent files effectively and noting the promise of computer-based solutions to aid the agency in its search efforts). An interesting potential benefit of an automated search is the simplification of the examiner’s task of combining references for obviousness determinations by automatically finding primary references. See Schwartz, supra note 46, at 807. But see In re Mines Tire Co., 194 B.R. 23, 26 (Bankr. W.D.N.Y. 1996) (warning that while computer searching has vast potential, it “can never replace human judgment and discretion . . . [and] users must learn to recognize its shortcomings . . . [in order to] achieve the benefits of computer precision without jeopardizing the accuracy of a diligent human searcher”).

241. See generally Peggy Zorn et al., Finding Needles in the Haystack: Mining Meets the Web, ONLINE, Sept./Oct. 1999, at 17-18 (defining data mining as “analyzing the data in large databases to identify trends, similarities, and patterns to support managerial decision making”); Susan Mendelsohn, Patterns Formed by a Single Shot of Malt, INFO. WORLD REV., Aug. 1, 2000, at 25 (discussing the use of data mining tools in patent research); E.E. Mazier, Insurers Look To Strike Gold with Data Mining Technology, NAT'L
increasingly powerful search and analysis capabilities will continually improve the automated search component.

V. CONCLUSION

Outsourcing the examiner's prior art search to commercial vendors is fraught with legal and practical problems. Indeed, a patent examiner's decision-making function is so dependent upon the prior art search results that they essentially dictate the outcome of the patentability decision. In addition, in view of the exclusive constitutional and statutory rights at stake, any negative impact on the prior art search to maximize profits could infringe the constitutional rights of the patent owner, as well as others excluded from making, using, or selling the invention.

Moreover, the decision-making functions of both the patentability determination and prior art search are inextricably intertwined and cannot be reasonably separated. Thus, the prior art search is an inherently governmental function that cannot be appropriately outsourced. Contracting out this critical activity would seriously erode a patent's presumption of validity and ultimately jeopardize public confidence in the patent system. Outsourcing limited search functions to private vendors, such as non-patent literature searches, however, might serve as an excellent complement to the examiner's overall prior art search.

Therefore, an ideal system would combine: (1) examiners conducting the search, making use of their expertise in searching U.S. and foreign patents; (2) private vendors specializing in non-patent literature, augmenting the examiner's search; and (3) an automatic data mining operation effectively searching obscure areas otherwise impossible or impractical to search. Such a system would utilize the examiner's patent searching expertise, the private vendor's non-patent literature searching

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242. See supra note 129 and accompanying text.
244. The Constitution gives Congress the authority to “secur[e] for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries.” U.S. CONST. art. I, § 8, cl. 8. Accordingly, once a patent is granted, the patentee can exclude others from making, using, or selling the invention for twenty years from the filing date of the patent application. See 35 U.S.C. §§ 154(a), 271(a) (2000).
expertise, and powerful, state-of-the-art search technology.\textsuperscript{245} This three-pronged, synergistic approach would likely ensure the most comprehensive and effective search practicable, preserving the presumption of validity for each granted patent.

\textsuperscript{245} See Cottone, supra note 134, at 235-36 (concluding that prior art search effectiveness is enhanced by using many search approaches rather than increasing the amount of effort expended on a single approach); see also House Hearing on Patent Quality, supra note 9, at 68 (statement of James F. Cottone, President, National Intellectual Property Researchers Association) (concluding that to most effectively find patents, "automated searching and manual searching must exist side-by-side").