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ENDING THE PATENTING MONOPOLY

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For nearly two centuries, an inventor applying for a U.S. patent has been required to obtain the opinion of an expert who has searched the prior art and determined that the inventor's application meets the standards of patentability. And for nearly two centuries, those expert opinions could be obtained only from a single office run by the U.S. government. This patenting monopoly, which is almost certainly undesirable, is now being eroded. Rising global trade and technological sophistication have increased the number of patent filings in every country; government patent offices here and abroad are thus being driven to rely on patenting opinions from other public and private entities. For demonopolization to be effective, however, entities determining patentability must have high-powered incentives to make accurate judgments. Two disciplining

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mechanisms may be particularly useful: (1) randomly selecting private patenting opinions for an intensive governmental evaluation, with fines imposed on any examining firm if its opinion is found to have led to the issuance of an invalid patent, and (2) authorizing legal challenges to patents by private attorneys general. This Article offers preliminary assessments of the optimal design of these and other disciplining mechanisms.

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INTRODUCTION

For over 170 years, U.S. patent law has required that, prior to the assertion of any property rights in an invention, the inventor obtain a favorable opinion from a neutral expert who has examined the claim to invention and opined that it is valid. The expert opinion is not conclusive or unassailable. It may be held erroneous during subsequent litigation or administrative adjudication. Rather, the expert opinion is akin to an audit opinion from an independent accounting firm, which is required by law as a prerequisite for engaging in certain legal activities (e.g., for issuing public stock or maintaining a listing on a stock exchange¹). Historically, however, there has been one major difference between audits of financial statements and examinations of claims to invention: Patent examination in this country has traditionally been monopolized by the government-run patent office. Audit opinions, by contrast, are produced by a private, albeit regulated, industry of competing accounting firms.

In this Article, we argue that the monopolization of patent examination has almost certainly negatively affected the U.S. patent system, contributing to decreased productivity, low-quality output, and reduced incentives to adopt innovations for examination of patent applications. Fortunately, the patenting monopoly is now being eroded. We argue that this change should be welcomed and accelerated.

Movement toward ending the patenting monopoly can already be seen in such developments as increased international cooperation and competition in the patent-examining function, experiments in public “peer” patent review, proposals to require that inventors evaluate their own applications for patents, and calls for establishing a more heterogeneous system of quality gradations in patent examination. This ongoing change is global in nature; at least one country, Israel, already relies on examinations performed by any one of twelve patent offices.

Further reform should permit private firms to provide expert examination opinions.² Private firms often hold out hope for a full tran-

¹ See *United States v. Arthur Young & Co.*, 465 U.S. 805, 810-11 (1984).

² Under existing law, the U.S. Patent and Trademark Office (PTO) director signs, and thus technically issues, all patents. See 35 U.S.C. § 153 (2006). We see no reason to change this function, but our proposal suggests that the PTO director might rely on

sition from a homogeneous, one-size-fits-all patenting monopoly to a diverse but individually-tailored examination structure. Of course, an overarching regulatory structure would be essential for ensuring that the heterogeneous cadre of examining firms would have appropriate incentives to produce quality examinations. Some punishment must follow bad examinations, and there is good reason to believe that sufficient punishment could be devised to improve the quality of patent examination over today's standards.

The administrative problem of monitoring several dozen examination firms might be qualitatively less difficult than the current task of the U.S. Patent and Trademark Office (PTO). Today, the PTO must attempt to monitor and regulate the behavior of several thousand examiners, many of whom are with the agency for only a few years. Indeed, the agency's current administrative task can accurately be described as trying to create a set of rewards and punishments so that thousands of individual examiners have good private incentives for producing accurate examinations. Given the restrictions imposed by federal employment law, however, it is by no means clear that the agency is succeeding in this task—or even that it could succeed. For example, there is no evidence that the agency punishes, or currently could punish, examiners who issue patents later held invalid by the courts.

Demonopolization of examination would likely increase the agency's power to achieve the fundamental goal of ensuring that the experts (whether employed publicly or privately) reviewing patent applications have good incentives as they opine on patentability. While we consider a variety of possible mechanisms to provide such incentives, we highlight two ingredients that would likely be critical to a comprehensive solution.

First, some privately issued patenting opinions would have to be randomly selected for evaluation by a public body (e.g., the PTO or a court). Sufficient fines would have to be imposed in cases of invalid patents such that issuing firms would not ordinarily have an incentive to issue patents that the public body would likely find invalid. The profit incentive of the private firms would therefore be to anticipate the assessments of this body, which, because it would evaluate only a small number of patents, could do a better job than a governmental patent office charged with evaluating all patents. We discuss a formula that could be used to generate appropriate incentives, but we

private examining firms as a supplement or even as an alternative to the PTO's own examining corps for determining whether to affix her signature.

also recognize that an administrative structure and fines could be optimized only through repeated experimentation.

Second, to remove—or at least sharply limit—any residual incentive that a private patent-examining firm would have to opine in favor of an excessively broad or otherwise invalid patent, we would recommend a second stage of review at least as stringent as that in today's system. Currently, potential or accused infringers can challenge patents in at least two ways: (1) by filing a declaratory-judgment action or (2) by raising the patent's invalidity as a defense to an infringement action. Such a system should be continued, and, if necessary, even greater avenues could be created to foster challenges to issued patents. Three potential, powerful legal devices for ferreting out improperly issued patents are opposition proceedings, a lesser presumption of validity (or perhaps a presumption tailored to the private firm's reputation or the thoroughness of its prior art search), and the use of private attorneys general to challenge patents.

Change always has risks, and the end of the current patenting monopoly therefore has dangers. Such change, however, also brings a wealth of opportunities. Acknowledging the risks, we do not argue for a hasty transition to a new system. Rather, we seek to shed light on the forces behind the change, to predict the likely trajectory of the trend, and to encourage policymakers to undertake needed experimentation that will acquaint them with the already-emerging new administrative structures. In sum, skeptics should not allow fear of the new to block the way toward thoughtful experimentation with alternatives.

I. THE PATENT OFFICE AS GOVERNMENT MONOPOLIST

The PTO has a monopoly over the grant of patents in the United States.³ This does not mean that the Office acts like a private, corporate monopolist in all respects, however. Understanding the behavior of the PTO thus requires an analysis not of the monopolistic behavior of industrial organizations but rather of administrative agencies and the bureaucrats who run them. Administrative agencies are a varied lot; they perform tasks ranging from conducting foreign policy to regulating securities. While all agencies may share some commonalities arising from their similar political and legal constraints, we can

³ We do not address the PTO's responsibility for registering trademarks. For an interesting recent article arguing that this function should be privatized, see Irina D. Manta, *Privatizing Trademarks*, 51 ARIZ. L. REV. 381 (2009).

better understand the PTO by considering administrative agencies that bear a relatively close resemblance to it.

There are, of course, no perfect matches, but the most salient attribute of the PTO for comparison purposes is quite arguably its workload. The PTO receives a huge number of patent applications each year, a number that is largely beyond its immediate control. The PTO must process these applications at a rate approximately equal to the rate at which they arrive, or else it falls behind. In this sense, the PTO is an agency that must perform a production function on a mass scale, and it must exercise judgment in doing so. Other agencies, including the U.S. Postal Service and the Social Security Administration (SSA), face equally large production challenges. These two agencies nonetheless differ from each other, and each matches only some of the PTO's attributes. The Postal Service is similar to the PTO, for example, in that both sell services to the public. The SSA is similar to the PTO—but unlike the Postal Service—in that both must dispense justice, or at least attempt to dispense justice, on a massive scale. Accordingly, Section I.A develops the analogy to the Postal Service by exploring the production problem facing the PTO, and Section I.B develops the analogy to the SSA by exploring the mass-justice problem.

A. *The Production Problem*

Like the PTO, the Postal Service has historically been a government-run monopolist. Technically, it is structured as a government-owned corporation,⁴ and as a result it is not subject to the ordinary rules of administrative law.⁵ Its government ownership carries a number of benefits, including immunity from such other forms of federal regulation as the antitrust laws.⁶ The Postal Service is largely self-

⁴ See *Beneficial Fin. Co. of N.Y. v. Dallas*, 571 F.2d 125, 128 (2d Cir. 1978) (“[T]here is no doubt that the congressional purpose in establishing the USPS was to permit the postal service to operate in a ‘business-like’ fashion. To this end Congress removed the USPS from the political sphere and authorized it to act as an ‘independent establishment,’ with powers equivalent to a private business enterprise” (citations omitted)).

⁵ See 39 U.S.C. § 410(a) (2006) (“Except as provided by subsection (b) [and elsewhere in this title] . . . no Federal law dealing with public or Federal contracts, property, works, officers, employees, budgets, or funds . . . shall apply to the exercise of the powers of the Postal Service.”).

⁶ See *U.S. Postal Serv. v. Flamingo Indus. (USA) Ltd.*, 540 U.S. 736, 747 (2004) (“[T]he [Postal Reorganization Act] does not subject the Postal Service to antitrust liability.”); see also 39 U.S.C. § 409(e)(1) (limiting the Postal Service’s antitrust immunity to the postal activities reserved to the government by law).

financing,⁷ generally neither contributing to nor drawing from the public fisc; over time, it balances its budget by seeking approval from the Postal Regulatory Commission (PRC), an oversight board, for postal-fee increases.⁸

There have been several proposals to turn the PTO into a similarly structured, self-financing government corporation, though to date none of these proposals has been enacted.⁹ In some recent years, however, the PTO has been a net-revenue contributor to the federal budget.¹⁰ Nonetheless, when the PTO wishes to increase its fees, it must seek congressional authorization.¹¹

This points to an initial problem for the PTO: scalability. The rapid increase in the number of patent applications means that the

⁷ See 39 U.S.C. § 2401(a) (“There are appropriated to the Postal Service all revenues received by the Postal Service.”); see also *Portmann v. United States*, 674 F.2d 1155, 1163 (7th Cir. 1982) (“[T]he operations of the Postal Service are financed almost entirely from a self-sustaining fund generated out of the business revenue received by the Service”); *Standard Oil Div., Am. Oil Co. v. Starks*, 528 F.2d 201, 202 (7th Cir. 1975) (per curiam) (“[I]n enacting [The Postal Reorganization Act,] 39 U.S.C. § 2401, Congress . . . wished to make the delivery of the mail a self-supporting enterprise.”).

⁸ See 39 U.S.C. § 3622 (conferring on the PRC the power to regulate postal rates); see also 39 C.F.R. §§ 3001.51–.60 (2008) (setting forth the rules for changing Postal Service rates).

⁹ See, e.g., 143 CONG. REC. S3443 (1997) (statement of Sen. Lautenberg) (introducing a bill to make the PTO a government corporation with greater financial independence); see also Jeffrey M. Samuels & Linda B. Samuels, *The Trademark Office as a Government Corporation*, 7 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 137, 138 (1996) (noting that four bills were introduced in 1995 to make the PTO an independent government corporation).

¹⁰ See Brian E. Mack, Note, *PTO Rulemaking in the Twenty-First Century: Defining the Line Between Strategic Planning and Abuse of Authority*, 75 FORDHAM L. REV. 2105, 2106 (2007) (“The PTO has been self-sufficient since 1991, capable of deriving its entire operating budget from applicant fee revenue, and even saw a surplus of over \$545 million between fiscal year (FY) 1991 and 2004, and a net income of over \$80 million in FY 2006 alone.” (footnote omitted)); Clarence C. Crawford, *A Budget for All Seasons*, PTO TODAY, Feb. 2000, at 4, 7, <http://www.uspto.gov/web/offices/ac/ahrpa/opa/ptoday/ptoday02.pdf> (giving a primer on the PTO budget cycle and showing an authorized expenditure of \$880 million in fiscal year 2000, compared with a revenue of \$1.1 billion in fiscal year 2001); see also *Figueroa v. United States*, 466 F.3d 1023, 1027 (Fed. Cir. 2006) (reporting a PTO surplus of \$545.1 million from fiscal years 1991 to 2004).

¹¹ See 35 U.S.C. § 41 (2006) (setting out the fee schedule); see also Mack, *supra* note 10, at 2150 (noting the PTO’s option to lobby Congress for an increase in the patent-application filing fee). Fees were raised by the Consolidated Appropriations Act, 2005, Pub. L. No. 108-447, §§ 801-803, 118 Stat. 2809, 2924-30 (2004).

PTO needs to grow, too. Indeed, the PTO has grown over time,¹² and in recent years it has claimed to have achieved increases in productivity.¹³ But the process that determines whether and when the PTO can grow is largely a political one, rather than a business decision by the PTO itself. This helps explain why the past leadership of the PTO has hoped to gain the government-owned-corporation status of the Postal Service. Freed not only from regulation by the General Services Administration and the Office of Personnel Management¹⁴ but also from the annual congressional-appropriations cycle, the PTO could make its own decisions regarding growth and basic operations. Opening a new branch of the PTO to take advantage of potential examiners in another part of the country would not be much more difficult than opening a new, large sorting center.¹⁵ The PTO would not have to employ such programs as work-at-home initiatives¹⁶ if the agency had as much flexibility as a private organization in satisfying its space needs.¹⁷

¹² The PTO currently has 9518 employees, including 6055 patent examiners. U.S. PATENT & TRADEMARK OFFICE, PERFORMANCE AND ACCOUNTABILITY REPORT FISCAL YEAR 2008, at 13.

¹³ See Press Release, U.S. Patent & Trademark Office, USPTO 2008 Fiscal Year-End Results Demonstrate Commitment to Sustaining High Performance (Nov. 17, 2008), available at <http://www.uspto.gov/web/offices/com/speeches/08-42.htm> ("Production has increased by 38.6 percent over the past four years, compared to a 21.3 percent increase in application filings during the same period.")

¹⁴ See 5 U.S.C. § 1103(a)(5)(A) (2006) (vesting the Office of Personnel Management (OPM) with the responsibility to administer the civil service); U.S. Gen. Servs. Admin., Background and History, http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_OVERVIEW&contentId=13339 (last visited Apr. 15, 2009) (reporting the mission of the General Services Administration (GSA) to "exercise responsible asset management" and "deliver superior workplaces" for the federal government, among other goals). The Postal Service is at least partially free from GSA and OPM regulation. See, e.g., *United States v. Elec. Data Sys. Fed. Corp.*, 857 F.2d 1444, 1446 (Fed. Cir. 1988) (finding the Postal Service exempt from GSA oversight of procurement of automated data-processing equipment); U.S. Office of Pers. Mgmt., Laws, Regulations & Other Guidance, http://www.opm.gov/hr_practitioners/lawsregulations/citizenship/index.asp (last visited Apr. 15, 2009) (noting that the Postal Service is outside the federal competitive service).

¹⁵ See Jason J. Chung, *Patent Pendency Problems and Possible Solutions to Reducing Patent Pendency at the United States Patent and Trademark Office*, 90 J. PAT. & TRADEMARK OFF. SOC'Y 58, 80 (2008) (discussing the advantages of opening a new PTO location).

¹⁶ The work-at-home program was initially intended for employees processing trademarks but was later tested with patent examiners as well. See Press Release, U.S. Patent & Trademark Office, USPTO Deputy Director Peterlin Testifies at House Committee Hearing on Telework (Nov. 6, 2007), available at <http://www.uspto.gov/web/offices/com/speeches/07-45.htm> (describing the trademark and patent work-at-home programs).

¹⁷ See OFFICE OF INSPECTOR GEN., U.S. DEP'T OF COMMERCE, FINAL INSPECTION REPORT NO. IPE-9724, PTO NEEDS TO REFINE ITS SPACE CONSOLIDATION PLANNING 3-4

We are, however, skeptical that making the PTO a government-owned corporation would necessarily improve the agency's performance. The danger of such a status is reduced accountability *even if the agency maintains its monopolistic position*. As long as the PTO must ask Congress for money, it faces legislative oversight. If governmental reports, such as those of the Office of Inspector General of the Department of Commerce, criticize how the PTO manages its operations,¹⁸ the PTO has some incentive to implement reforms, lest Congress use mismanagement as an excuse to deny funding increases. The Postal Service, by contrast, does not have to appeal directly to Congress for funding; it need only convince the PRC to increase postal rates.¹⁹ Perhaps such a commission could better promote reform, by devoting more attention to the government-owned corporation than a legislature would to an agency, and of course a legislature might be more susceptible to special interests.²⁰ Yet it is also possible that such a commission might be less likely to punish a government-owned corporation for mismanagement than a legislature would be. But even if status as a government corporation were to bring better oversight, the change would be marginal, for the incentives of the overseers would be fundamentally political rather than economic.

Even with political pressure and institutional initiative, the PTO might fall well short of efficient operation. Consider, for example, an issue that has received considerable attention: the PTO's system for measuring patent examiners' productivity and assessing whether they have met or exceeded their work quotas. As a 2004 Inspector General report noted, the system at the time was quite simple, and the "PTO ha[d] not revised current examiner goals since 1976."²¹ Examiners

(1998) (discussing the relationship between the work-at-home program and the PTO's space needs).

¹⁸ See generally *id.* (meting out such criticism).

¹⁹ See, e.g., Postal Regulatory Comm'n, About the Postal Regulatory Commission, <http://www.prc.gov/prc-pages/about/default.aspx> (last visited Apr. 15, 2009) (explaining the PRC's regulatory power over postal rates).

²⁰ For example, James Wilson recalls that when the Postal Service planned to reduce costs by eliminating Saturday mail delivery, it had "data indicating that most people would prefer no Saturday delivery to higher postage rates." Nonetheless, employee unions seemingly "feared that the elimination of Saturday deliveries would lead to laying off postal workers." The result was that "[t]he House of Representatives by an overwhelming vote passed a resolution opposing the change, and the USPS backed down." JAMES Q. WILSON, BUREAUCRACY: WHAT GOVERNMENT AGENCIES DO AND WHY THEY DO IT 124 (1989).

²¹ OFFICE OF INSPECTOR GEN., U.S. DEP'T OF COMMERCE, FINAL INSPECTION REPORT NO. IPE-15722, USPTO SHOULD REASSESS HOW EXAMINER GOALS, PERFORMANCE

received points called “counts” with “one count for each first office action and one for each disposal.”²² The required number of counts varied across technology areas, and certain bonus awards were available for examiners who met various criteria.²³ Based on interviews, the report noted that “[s]upervisory patent examiners indicated that some of the goals [we]re probably too easy to reach.”²⁴

Another common criticism of the system has been that it encourages application “churning,” whereby an examiner repeatedly issues so-called “final” application rejections that an applicant can overcome by filing a “Request for Continued Examination” and the requisite fee for such request.²⁵ The PTO has responded to some of these criticisms by introducing the Flat Goal pilot program, which retains the basic system but makes some adjustments.²⁶ Whether this new program represents a step forward or a step back, the Inspector General report’s analysis reveals a more fundamental predicament facing the PTO: problems can persist for many years without much improvement.

We are not arguing that the PTO has been systematically mismanaged. Given the difficulty of its mission and the myriad bureaucratic

APPRAISAL PLANS, AND THE AWARD SYSTEM STIMULATE AND REWARD EXAMINER PRODUCTION 7 (2004).

²² *Id.* (footnote omitted).

²³ *Id.* at 7-8.

²⁴ *Id.* at 12.

²⁵ See Posting of Clifford D. Hyra to Patents 101, What Is the Examiner’s Motivation? (pt. 2), <http://patents101.com/2009/01/what-is-the-examiners-motivation-part-2> (Jan. 12, 2009) (explaining examiners’ strong incentives to issue “final” rejections because each generates a “count” but likely leads to further rounds of examination, at which point examiners receive another “count” without having to expend time learning new facts).

²⁶ See U.S. PATENT & TRADEMARK OFFICE, *supra* note 12, at 18-19 (discussing how the program encourages productivity by departing from hourly based compensation, setting a flat number of applications for each art group, and assigning bonuses for applications examined above this number). For a more detailed description from an examiner’s perspective, see *USPTO Flat-Goal Plan Equals Higher Examiner Production Goals*, POPA NEWS (Patent Office Prof’l Ass’n, Arlington, Va.), July 2006, at 3, available at http://www.popa.org/pdf/newsletters/2006_07.pdf. For a negative reaction to the program, see *Raw Goal Plan Is a Raw Deal*, POPA NEWS (Patent Office Prof’l Ass’n, Arlington, Va.), Nov. 2006, at 1, available at http://www.popa.org/pdf/newsletters/2006_11.pdf. See also *Oversight Hearing on the U.S. Patent and Trademark Office: Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Property of the H. Comm. on the Judiciary*, 110th Cong. 128 (2008) (statement of Robert D. Budens, President, Patent Office Prof’l Ass’n) (“[A]lmost all examiners just find [the flat goal] program reprehensible and are scared to death that the agency is going to implement it . . .”); Posting to ExamineThis, Flat Goal, <http://examinethis2007.blogspot.com> (Nov. 13, 2007) (complaining that “Flat Goal increases production levels in a system that doesn’t give adequate time for examining as it is”).

constraints that it faces, it might perform poorly even with very good management. Nor do we mean to suggest that a superior system for assessing examiner performance could be easily developed. Rather, we think that the exercise of having a government agency develop a systematic approach to assessing worker productivity is inherently a challenging one. Constrained by bureaucratic norms favoring uniformity and transparency, the PTO has developed a system of rules representing, at best, a crude approximation of the quality of individual examiners' work. But such uniform rules are unlikely to be optimal, particularly where the workers cover widely different technologies that may demand different approaches.

The challenge of running a governmental production organization is fundamentally a challenge of central planning. To be sure, central planning can be done relatively poorly or relatively well. The Postal Service, for instance, delivers the mail while avoiding the endemic corruption afflicting government enterprises in centrally planned economies. The PTO, we believe, is considerably more efficient than similar organizations in countries where the government workforce is less professional and more subject to corruption. But when it comes to tasks like measuring employee performance, the public sector is unlikely to be as effective as the private sector. Because agency officials do not have a strong profit motive, a principal worry is that if they have too much discretion, they might treat employees arbitrarily. Thus, laws are enacted to constrain them to act in accordance with rules. These rules, however, like all rules, are necessarily both over- and underinclusive.²⁷ The broader problem is, as James Wilson notes, "that political supervision of the factors of production leads managers to become constraint-oriented rather than task-oriented."²⁸

Central planning allows for the possibility of rewarding good employees, but developing a bureaucratic plan for measuring employee performance in a way that aligns the interests of the employee and employer is inherently difficult. For several reasons, private organizations generally develop performance metrics for employees more effectively. First, competition gives private enterprises greater incentives to develop efficient production systems. Second, at least in smaller

²⁷ See Samuel W. Buell, *The Upside of Overbreadth*, 83 N.Y.U. L. REV. 1491, 1522 n.101 (2008) (identifying the potential effects of the fact that "[a]ll legal rules are unavoidably underinclusive and/or overinclusive" on judge-made rules).

²⁸ WILSON, *supra* note 20, at 125.

firms (and *any* nonmonopolist, private examination firm would necessarily be smaller than the PTO), there may be less bureaucratic resistance to experimenting with and implementing new approaches. Third, systematic, rule-based approaches are not always desirable. A private organization might recognize that it is futile to seek a perfect formula for measuring employee productivity and rely instead on more informal private incentives to identify employees who should be fired or rewarded.

Finally, a private firm has the freedom to be small and specialize. The firm might develop good management techniques for a small set of workers, all of whom specialize in examining similar technology (e.g., telecommunications). While the PTO itself tries to duplicate such specialization by creating “art units” with their own managers, such entities are far less autonomous than specialized private firms, and the rules applicable to any one art unit are a proper subject for collective bargaining between the central administration of the agency and the management of the examiner’s union.

We do not intend to revisit here the twentieth-century debate over the relative efficiency of government central planning and market production. Not only is the debate too voluminous, but we also believe that, despite its frequent follies, the private sector is clearly the winner. Those who believe that a centralized government enterprise can run a production process as efficiently as a competitive private-sector entity should reject our argument. In the United States today, however, most who argue for a larger government sector do so because they believe that more government regulation of private enterprise is necessary to avoid market failures, not because government enterprises are more efficient than private ones. For example, champions of a greater government role argue that health-care consumers have too little information²⁹ or that industrial operations might produce pollution or other negative externalities.³⁰ Those arguments,

²⁹ See Kenneth J. Arrow, *Uncertainty and the Welfare Economics of Medical Care*, 53 AM. ECON. REV. 941, 948-54 (1963) (explaining the characteristics of the medical-care market, such as product uncertainty, that distinguish it from the market for ordinary commodities); cf. Eleanor D. Kinney, *The Corporate Transformation of Medical Specialty Care: The Exemplary Case of Neonatology*, 36 J.L. MED. & ETHICS 790, 797-98 (2008) (“Commerce in physician services does not operate as a free market in which for-profit firms compete for quality and prices in a competitive market and are able to provide high quality, affordable products without public subsidies.”).

³⁰ See, e.g., HENRY N. BUTLER & JONATHAN R. MACEY, USING FEDERALISM TO IMPROVE ENVIRONMENTAL POLICY 5 (1996) (explaining that the “goal of governmental regulation of pollution is to force polluters to bear the full costs of their activities”);

however, do not undermine the fundamental point that once the PTO is seen as engaged in a production task, the case for government provision is no stronger than it would be for other service industries in which customers are relatively sophisticated parties.

The problem of measuring employee performance is only a representative one. Even within the area of labor policy, there are other challenges. One is that government employees are difficult to fire—and even where dismissal procedures exist, managers may not have much incentive to go through the trouble of utilizing them.³¹ Notably, government-owned enterprises may pay higher compensation than similar private entities. For instance, a study of the Postal Service found that postal employees' wages were twenty-eight percent higher than those of similarly situated private-sector workers.³² Both postal employees and PTO employees have strong unions,³³ and government unions have become stronger as private-sector unionism has declined.³⁴ The PTO must negotiate a wide variety of issues affecting

Tory H. Lewis, Note, *Managing Manure: Using Good Neighbor Agreements To Regulate Pollution from Agricultural Production*, 61 VAND. L. REV. 1555, 1561 (2008) (identifying the use of nuisance suits to deal with the environmental degradation resulting from market failures).

³¹ See STEWART LIFF, MANAGING GOVERNMENT EMPLOYEES: HOW TO MOTIVATE YOUR PEOPLE, DEAL WITH DIFFICULT ISSUES, AND ACHIEVE TANGIBLE RESULTS 8-9 (2007) (explaining how government employees enjoy better job security than private sector employees); see also *Bd. of County Comm'rs v. Umbehr*, 518 U.S. 668, 673-75 (1996) (acknowledging that the government's general freedom to terminate employees at will is subject to limited constitutional protection, such as for free speech). The government's role should be directed toward regulating rather than producing. The distinction made here is highly similar to the one highlighted in DAVID OSBORNE & TED GAEBLER, *REINVENTING GOVERNMENT: HOW THE ENTREPRENEURIAL SPIRIT IS TRANSFORMING THE PUBLIC SECTOR* (1992). Those authors famously recommended that government concentrate its efforts on "steering" (i.e., regulating) and avoid "rowing" (i.e., delivering services). See *id.* at 25 (quoting E.S. Savas). *Reinventing Government* was widely recognized as having "obviously had an enormous influence on the Clinton administration." Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 7 n.25 (1995).

³² Barry T. Hirsch et al., *Postal Service Compensation and the Comparability Standard*, in 18 RESEARCH IN LABOR ECONOMICS 243, 267 (Solomon W. Polachek ed., 1999).

³³ See, e.g., Am. Postal Workers Union, About the American Postal Workers Union, <http://www.apwu.org/about/index.htm> (last visited Apr. 15, 2009) (showing that the four major postal-worker unions represent approximately 668,000 employees).

³⁴ See Panel Discussion, *Living with Privatization: At Work and in the Community*, 28 FORDHAM URB. L.J. 1397, 1406 (2001) (statement of Professor John D. Donahue) ("Union membership is more than four times as high in government as in the private sector."); see also Leo Troy, *Are Municipal Collective Bargaining and Municipal Governance Compatible?*, 5 U. PA. J. LAB. & EMP. L. 453, 458 (2003) ("[O]rganized public employees are generally more highly paid than organized private union members.").

working conditions with the union,³⁵ providing a further obstacle to changing the production process. Moreover, the Government Accountability Office has reported examiners' concerns with the "atmosphere of distrust" that is "exacerbated by the contentious relationship between USPTO management and the examiners' union."³⁶

It is possible that the PTO is meaningfully different from the Postal Service with respect to salary levels and that the PTO underpays its employees. While the Postal Service has historically had high retention rates,³⁷ the PTO faces high attrition rates.³⁸ The PTO is also constrained by government pay scales. From an efficiency-wage perspective, it might make sense for the PTO to pay considerably higher salaries to its best employees.³⁹ Presumably, by doing so, the PTO would also be able to attract and retain higher-quality examiners. More research would be needed to assess whether average salaries are too low. Nevertheless, it is clear that examiner salaries are not being determined by market forces.⁴⁰ The regulatory constraints that the PTO faces may make sense, given that the PTO is a government agency, but we suspect that the private sector would better determine appropriate salary levels. This is not because private firms necessarily make optimal decisions from the beginning but because competition

³⁵ See, e.g., Letter from Robert Budens, President, Patent Office Prof'l Ass'n, to Bargaining Unit Members, Update on Collective Bargaining Negotiations (Feb. 5, 2008), available at <http://www.popa.org/pdf/misc/CBA-budens-05feb2008.pdf> (summarizing five topics of negotiations with the PTO).

³⁶ U.S. GOV'T ACCOUNTABILITY OFFICE, INTELLECTUAL PROPERTY: USPTO HAS MADE PROGRESS IN HIRING EXAMINERS, BUT CHALLENGES TO RETENTION REMAIN 5 (2005).

³⁷ See, e.g., Jeffrey M. Perloff & Michael L. Wachter, *Wage Comparability in the U.S. Postal Service*, 38 INDUS. & LAB. REL. REV. 26, 32 (1984) (discussing the Postal Service's "extraordinarily low quit rate").

³⁸ See U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 36, at 24 (attributing the rise in PTO attrition partly to an increase in the number of retiring examiners); see also THOMAS H. STANTON ET AL., NAT'L ACAD. OF PUB. ADMIN., U.S. PATENT AND TRADEMARK OFFICE: TRANSFORMING TO MEET THE CHALLENGES OF THE 21ST CENTURY 79-89 (2005) (examining the difficulties in finding and retaining good examiners).

³⁹ See Hirsch et al., *supra* note 32, at 244 (noting that basic economic theory requires that compensation be determined in light of a worker's skills and the job's characteristics).

⁴⁰ Though government agencies may claim to pay market wages, this happens only in an approximate sense. Because the federal pay scale is determined through a combination of statutes and centralized regulations (resulting in the standard government service (GS) pay scale), government agencies typically are unable to quickly adjust wages in response to market conditions. These agencies also tend to lack the flexibility to reward exceptional individuals with significantly higher than normal wages.

among private firms provides information about which salary levels are most efficient.

Indeed, the most significant advantages of private, rather than governmental, provision arise from the process of competition. This highlights another problem with the production process at the PTO: the slow pace of innovation. Although the PTO hones its production processes—e.g., by improving its information-technology infrastructure—it does not do so quickly. For instance, it was not until 2004 that the PTO adopted a paperless system for handling the various forms associated with the application process.⁴¹ While the PTO has greatly increased public access to information within the Office, its website still does not offer patents in the ubiquitous PDF format⁴²—though Google and pat2pdf.org do so for free.⁴³ The inability of the PTO to adhere to basic commercial standards and adopt new technology is representative of the organizational challenges that government-owned enterprises face. Indeed, the Postal Service is similarly dependent on information technology and yet slow to improve.⁴⁴

The difficulty of innovating within a government structure can affect not only the efficiency with which particular products are produced but also the number of different products offered. That monopolists may offer an insufficient number of differentiated products is reflected in Henry Ford's famous adage that the customer can have "any color as long as it's black."⁴⁵ This problem, however, may be

⁴¹ See Kevin E. Flynn, *US Patent and Trademark Office Celebrates a Pair of Milestones* (pt. 1), LOCAL TECH WIRE, Sept. 22, 2004, http://localtechwire.com/business/local_tech_wire/opinion/story/1160551; see also STANTON ET AL., *supra* note 38, at 13-14 (commenting on the development of the PTO's electronic-filing initiatives).

⁴² Images of issued patents and published applications are only available from the PTO website in TIFF format. See USPTO Patent Full-Text and Image Database: Patent Full-Page Images, <http://patft.uspto.gov/help/images.htm> (last visited Apr. 15, 2009).

⁴³ See Google Patent Search, <http://www.google.com/patents> (last visited Apr. 15, 2009) (offering free searchable patents with PDF downloads); A Free Patent Search Tool, <http://www.pat2pdf.org/> (last visited Apr. 15, 2009) (providing free PDF versions of patents obtained from the PTO's database).

⁴⁴ See, e.g., TAMMY L. WHITCOMB ET AL., OFFICE OF INSPECTOR GEN., U.S. POSTAL SERV., REPORT NO. IS-MA-07-001, STATE OF INFORMATION TECHNOLOGY WITHIN THE POSTAL SERVICE (2007) (finding notable improvement in, but continued need for improvement to, information technology within the Postal Service); Tridas Mukhopadhyay et al., *Information Technology Impact on Process Output and Quality*, 43 MGMT. SCI. 1645, 1647 (1997) (reporting that the Postal Service began deploying optical-character-recognition devices in 1987, had deployed about 2000 by 1991, and expected 12,000 deployed by the end of 1995).

⁴⁵ See Peter F. Drucker, *The Emerging Theory of Manufacturing*, HARV. BUS. REV., May-June 1990, at 94, 98.

more acute with government monopolists, who need not worry as much about even the prospect of competition. For instance, General Motors was ultimately able to compete with Ford by offering more diversity in color and style.⁴⁶ The Postal Service has innovated in some areas, but in other areas it has simply copied the innovations of others. For example, the Postal Service exempted overnight-mail delivery from its monopoly over the mail system, only to discover that it was at a disadvantage when other businesses entered the market and flourished. It thus decided to enter the market.⁴⁷ Despite its tardiness in realizing the market's potential, the Postal Service was able to compete with the more experienced providers because it retained its monopoly in other areas of service (like first-class mail); it was thus able to cross-subsidize its overnight-mail delivery with profits from its non-competitive services.⁴⁸ Without competition, the Postal Service may perhaps have eventually entered the overnight-mail business, but it seems doubtful that prices would be as low as they are now.

The PTO also lacks differentiated products. One could say that each patent examination is custom made, in the sense that the PTO must analyze the particular patent application and assess the relevant prior art. The PTO, however, currently offers only one examination track, which may be too thorough for some inventions and too lax for others. Mark Lemley and Doug Lichtman have advocated for at least two tracks, one of which would be for "gold-plated patents."⁴⁹ These patents would face increased scrutiny by the PTO but receive more

⁴⁶ *Id.*

⁴⁷ See *Air Courier Conference of Am. v. Am. Postal Workers Union*, 498 U.S. 517, 519-20 (1991) (describing the Postal Service's 1979 decision to "allow overnight delivery by private carrier services" and its subsequent suspension of private "international remailing" services).

⁴⁸ See Written Statement of Mike Eskew, Chairman and CEO, UPS, to the President's Commission on the Postal Service (Feb. 20, 2003), available at <http://www.treasury.gov/offices/domestic-finance/usps/testimony-docs/Eskew.doc> (voicing concern with the Postal Service's subsidization of its competitive products with rents from its monopolistic services); see also PRESIDENT'S COMM'N ON THE U.S. POSTAL SERV., *EMBRACING THE FUTURE: MAKING THE TOUGH CHOICES TO PRESERVE UNIVERSAL MAIL SERVICE* 67 (2003) (recommending improvement in the Postal Service's cost-allocation system so that the Postal Service does not cross-subsidize its competitive services).

⁴⁹ Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law's Presumption of Validity*, 60 STAN. L. REV. 45, 61-63 (2007); see also Kristen Osenga, *Entrance Ramps, Tolls, and Express Lanes—Proposals for Decreasing Traffic Congestion in the Patent Office*, 33 FLA. ST. U. L. REV. 119 (2005) (proposing that the PTO move toward more heterogeneity in its examination functions).

deference from the courts than other patents.⁵⁰ Other commentators have suggested that the PTO allow some patent applicants to choose deferred examination, thereby reducing the Office's caseload and allowing other applicants to obtain review with less delay.⁵¹ A recent and innovative proposal, for example, was for an auction mechanism that could focus the PTO's efforts on the most important patents.⁵² Although some PTO initiatives seem receptive to some of these proposals,⁵³ administrative change has been glacial. Demonopolization of the PTO could bring about much faster change.⁵⁴ Different firms could offer different levels of service,⁵⁵ queues could vanish as more firms entered the market, and the PTO could concentrate its efforts on evaluating these reforms without worrying about having to process its huge backlog of pending applications.

Can the production challenges of the PTO be overcome without demonopolization? Professors Mitu Gulati and David Skeel have argued that it is possible to create efficient mechanisms to help discipline state-owned enterprises.⁵⁶ They suggest, for example, that government-owned enterprises be required to raise some of their funds from private-sector sources, that employee salaries be tied to the overall performance of the enterprise, and that politicians be held politi-

⁵⁰ See Lichtman & Lemley, *supra* note 49, at 62-63 (opining that patents that survived this more rigorous, supplemental review by patent examiners should receive "a strong presumption of validity").

⁵¹ See Nancy J. Linck et al., *A New Patent Examination System for the New Millennium*, 35 HOUS. L. REV. 305, 318 (1998).

⁵² See Chris J. Katopis, *Perfect Happiness?: Game Theory as a Tool for Enhancing Patent Quality*, 10 YALE J.L. & TECH. 360, 397 (2008) ("This optimization will immediately focus scarce examination resources on a smaller set of more worthy applications and will in turn enhance overall patent quality. The auction helps weed out those patents of foreseeably little economic value or industrial importance.").

⁵³ See U.S. PATENT & TRADEMARK OFFICE, U.S. DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE §§ 708.02(a), 709(I)(c) (8th ed., 7th rev. 2008) [hereinafter PTO, MPEP] (detailing the procedures for requesting accelerated and deferred review of patent applications); see also Ayal Sharon & Yifan Liu, *Improving Patent Examination Efficiency and Quality: An Operations Research Analysis of the USPTO, Using Queuing Theory*, 17 FED. CIR. B.J. 133, 160-61 (2007) (addressing the PTO's proposed accelerated and deferred examination processes).

⁵⁴ The PTO is currently "combating a seemingly insurmountable backlog of unexamined patent applications and ever-increasing application pendency." Mack, *supra* note 10, at 2105 (footnote omitted). For an analysis of this queuing at the PTO, see Sharon & Liu, *supra* note 53.

⁵⁵ See *infra* Section III.A (discussing the incentives that patentees and patent-examining firms would have to choose intensive examination for relatively important patents).

⁵⁶ Mitu Gulati & David Skeel, *How To Get the Government-Owned Corporation Working*, 36 ECON. & POL. WKLY. 4460, 4460 (2001).

cally accountable for the performance of the enterprises that they oversee.⁵⁷ We agree that it may be possible to improve the operation of government-owned enterprises in general and of the PTO in particular. But as Gulati and Skeel recognize, historically even government-run enterprises staffed with honest and capable public servants have had “high levels of bureaucracy, sloth, political interference, and inefficiency.”⁵⁸ Whether or not the public sector can be made to operate as efficiently as the private sector, the fact remains that it does not so operate today. In any event, a proposal to demonopolize the PTO would not abolish the entity. If government enterprises have some advantages over private enterprises (e.g., being able to pay less because government work provides employees with job security and feelings of civic virtue that the private sector cannot provide), then the PTO could survive the advent of competition.⁵⁹

B. *The Mass-Justice Problem*

Rather than the mail, the PTO delivers legal judgments, which are intended to carry some presumptive weight. Indeed, one possible objection to our proposal is that making such decisions should be viewed as a “core governmental function” that cannot be provided privately in an objective way. But this also points to another set of challenges that the PTO faces. Unlike with the Postal Service, where the quality of production can be measured in fairly objective terms (e.g., the length of time for mail to reach its correct destination and the amount of lost mail), the production of opinions about patent validity requires careful and sophisticated judgments, about which reasonable people may often disagree. Moreover, because of the volume of patent applications,⁶⁰ the PTO must delegate the decision-making function to thousands of individuals. The agency’s challenge is to ensure that the judgments of these individuals are of relatively high quality and highly consistent.

⁵⁷ *Id.* at 4460-61.

⁵⁸ *Id.* at 4460.

⁵⁹ See, e.g., Richard P. Nielsen, *Government-Owned Businesses: Market Presence, Competitive Advantages and Rationales for Their Support by the State*, 41 AM. J. ECON. & SOC. 17, 18 (1982) (listing the advantages that government-owned enterprises “can and frequently have enjoyed over privately-owned businesses,” such as favorable tax policies and other special governmental treatment).

⁶⁰ See U.S. PATENT & TRADEMARK OFFICE, TABLE OF ISSUE YEARS AND PATENT NUMBERS, FOR SELECTED DOCUMENT TYPES ISSUED SINCE 1836 (2009), available at <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/issuyear.pdf> (showing that the agency has issued more than a hundred thousand patents per year every year in the past decade).

The basic problem confronting the PTO is not unique to governmental agencies. Many private entities must ensure that their workers are making good judgments in their daily tasks, despite the difficulty of assessing the quality of these judgments with simple and purely objective measures. Private firms, however, typically have the freedom to evaluate these judgments using relatively informal procedures that rely on the subjective impressions of managers.⁶¹ For example, a law firm may discharge an associate whose work is subjectively viewed as poor by a number of more senior partners, even though the firm has no rigorous empirical proof of the associate's deficiency.

Governmental agencies generally do not permit such informal and subjective approaches to managing civil servants. Rather, civil-service laws require that the government manage its workforce in a relatively transparent, formal, and objective manner. These limitations on the government as employer may be desirable, for the transparency might prevent abuses that would not be remedied by market or political checks. We need not, however, dwell on the justifications for these laws. It is sufficient for the purposes of this Article that they exist.

Because the management of a government agency is subject to significant legal constraints, the managers might have difficulty ensuring the consistency of judgments made by subordinates who likely have not only varying degrees of talent but varying ideological or other biases. Thus, an examiner with an anti-patent predisposition has the freedom to reject many applications that a court would hold valid; an examiner with the opposite leaning is able to grant too many. Civil-service protections may make it difficult to punish or fire such decision makers, especially if their decisions, though consistently slanted, are nonetheless well reasoned.

Lacking informal mechanisms by which to police such decision makers, government institutions have typically employed two strategies as a counterbalance. First, decision-making power can be lodged in a multimember panel that, hopefully, averages out individual idiosyncrasies. This solution is expensive, however, for panels of many members might be necessary in order to average out individual biases. Alternatively, and more commonly in large bureaucracies, subordinates' discretion might be constrained by very specific rules.

A good example is provided by the SSA's system for determining whether an individual is entitled to disability benefits. Even though

⁶¹ See *infra* Part III (describing approaches to ensure that the profits of private patent-examining firms depend on the exercise of good judgment).

the SSA's statute defines "disability" in terms of the ability of an "individual" to perform "substantial gainful work,"⁶² the agency restricted its decision makers' discretion by promulgating an elaborate matrix purporting to determine whether work is available for an individual based on objective factors such as her physical abilities, age, education, and work experience.⁶³ The agency expressly justified its matrix on the ground that it "brings with it a uniformity that previously had been perceived as lacking," and the Supreme Court sustained the agency's power to take such an approach.⁶⁴

Like the SSA, the PTO has felt the need to restrain examiners' discretion with a set of fairly detailed rules, which are contained in the agency's *Manual of Patent Examining Procedure (MPEP)*. This "Bible" of patent examination is filled with hundreds of pages of fairly specific rules, and the agency has generally tried to control its examining corps with a set of objective standards. This historic tendency to prefer rules to discretion is understandable, because once the PTO begins to give free reign to its examiners to make decisions under vague legal standards, it faces the risk of examiner inconsistency and arbitrariness.

The greatest drawback of rules is also their defining feature: by their nature, they simplify more complex and nuanced situations. In the administrative context, however, there are two additional concerns about simplifying rules. First, it is not clear that the agency will have optimal incentives to write good rules. Even where the leadership of the PTO honestly seeks to act in the public interest, PTO officials might become too focused on the agency's own workload problems. The PTO leadership is composed of government employees whose performance is likely to be evaluated on the basis of easily measurable variables, such as backlogs and pendency times. Where the agency falls behind in its work (perhaps because of bad management), the agency might "improve" its perceived performance by issu-

⁶² 42 U.S.C. § 423(d)(2)(A) (2006).

⁶³ See *Heckler v. Campbell*, 461 U.S. 458, 461-62, 467 (1983) (describing the medical-vocational guidelines and finding them consistent with the Social Security Act).

⁶⁴ See *id.* at 468. Such a matrix does not eliminate all discretion. The SSA must still determine what an individual's abilities actually are. See *id.* at 467 (noting that the use of guidelines requires the Secretary of Health and Human Services to "assess each claimant's individual abilities . . . on the basis of evidence adduced at a hearing"). The agency also reserves the right to waive application of the matrix in a particular case, though such exceptions must be rare in order for the matrix to accomplish its goal of limiting discretion.

ing simplified rules that can be quickly applied even if simplicity sacrifices harder-to-measure values.

Consider, for example, the controversial issue of patentable subject matter.⁶⁵ While the PTO's backlog might arguably be a proper consideration in analysis of the issue,⁶⁶ it should almost certainly be a rather small topic in the large and complicated debate. There is, however, a danger that it could become a relatively large consideration for the PTO, which might want to restrict patentable subject matter using a fairly clear rule so that the agency can reject some categories of applications with little or no examination.⁶⁷ Indeed, the PTO might prefer a smaller jurisdiction with more freedom to succeed in impressing what remains of its constituencies.⁶⁸

Placing responsibility for both the regulatory function and the production function on the same officials creates a risk that the pro-

⁶⁵ See generally David J. Kappos et al., *A Technological Contribution Requirement for Patentable Subject Matter: Supreme Court Precedent and Policy*, 6 NW. J. TECH. & INTELL. PROP. 152 (2008) (arguing that the Federal Circuit's lenient patentability standard was contrary to the Constitution and Supreme Court precedent, and proposing a return to the "technological contribution" standard); Ashby Jones, *Court Narrows Definition of Patent Process*, WALL ST. J., Oct. 31, 2008, at C3 (discussing the Federal Circuit's decision raising the standard for patent validity); Brad Stone, *A Patent Ruling May Be Revisited*, N.Y. TIMES, Mar. 10, 2008, at C5 (noting the en banc reconsideration of the issue by the Federal Circuit).

⁶⁶ See, e.g., David S. Olson, *Taking the Utilitarian Basis for Patent Law Seriously: The Case for Restricting Patentable Subject Matter 8* (Boston Coll. Law Sch. Legal Studies Research Paper 163, 2008), available at <http://ssrn.com/abstract=933167> (arguing that a "thoughtful arbiter of patentable subject matter" would "decrease the number of patent applications that must be fully examined" by the PTO).

⁶⁷ It might seem that theories of bureaucracy would suggest that the PTO will necessarily seek to enlarge its jurisdiction. See, e.g., WILLIAM A. NISKANEN, JR., *BUREAUCRACY AND REPRESENTATIVE GOVERNMENT* 38-41 (1971) (setting forth the theory that agencies seek to maximize their budgets). Theorists of public administration, however, have long recognized that this is not always so. James Wilson, for instance, emphasizes that bureaucrats seek autonomy, which is not always maximized by large budgets. See WILSON, *supra* note 20, at 182 ("The view that all bureaus want larger budgets ignores the fact that there is often a tradeoff between bigger budgets on the one hand and the complexity of tasks, the number of rivals, and the multiplicity of constraints on the other.").

⁶⁸ Beginning in the late 1990s, the PTO stated that its goal was service to its "customers," which it defined as patent applicants rather than the public at large. This emphasis on customer service has proved to be highly controversial. See, e.g., Rochelle Dreyfuss, *Pathological Patenting: The PTO as Cause or Cure*, 104 MICH. L. REV. 1559, 1577 (2006) (decrying the PTO's decision to describe applicants as "customers" and asserting that "the method for overseeing examiners tends to reward grants over denials"); Brian Kahin, *Patents and Diversity in Innovation*, 13 MICH. TELECOMM. TECH. L. REV. 389, 396 (2007) ("The mission of the late 1990s, 'to help customers get patents,' was the highwater mark of this narrow institutional vision.").

duction task will influence the PTO in the conduct of its regulatory responsibilities. This combination will not always lead the PTO to narrow its group of constituents by rejecting patents. Considering that the PTO frequently refers to patent seekers as its “customers,” there is a danger that the PTO will cater to these customers rather than to the broader public. While the combination of regulatory and production functions might sometimes be beneficial, by alerting the PTO to the needs of patentees, there is also a danger that this closeness will facilitate an informal sort of regulatory capture.

A second, and more fundamental, problem with administrative bias toward rules is that the rules themselves might actually be ineffective in cabining the discretion of the decision makers. This concern is clearly present for the SSA rules. Even under the agency’s matrix for determining disability, residual discretion inevitably remains in evaluating individual medical determinations. In a policy statement, the SSA has acknowledged that medical opinions “always have a subjective component, because the effects of medical conditions on individuals vary so widely.”⁶⁹ As a result, the agency has concluded that “it is not possible to create rules that prescribe the weight to be given to each piece of evidence that [may be taken] into consideration in every case.”⁷⁰ One commentator has concluded that “[t]he Social Security regulations thereby reveal a basic tension in that they strive for objective identification of disability while acknowledging that the decision-making procedure includes a certain amount of subjectivity and individualization.”⁷¹ A principal battleground has been over who should have this discretion (the individual’s treating physician or agency officials), but, either way, the residual discretion may make a disability determination partially dependent on luck of the draw.⁷²

With the PTO there is also clear evidence that the agency’s rules are not especially effective in policing decision makers. For example, an empirical study by Douglas Lichtman confirmed that in eight of ten technology categories, there was a statistically significant difference among examiners in their tendency to alter claim language dur-

⁶⁹ Standards for Consultative Examinations and Existing Medical Evidence, 56 Fed. Reg. 36,932, 36,934 (Aug. 1, 1991) (codified at 20 C.F.R. §§ 404, 416 (2008)).

⁷⁰ *Id.*

⁷¹ Rachel Schneider, *A Role for the Courts: Treating Physician Evidence in Social Security Disability Determinations*, 3 U. CHI. L. SCH. ROUNDTABLE 391, 402 (1996).

⁷² See *id.* at 396-405 (tracing the history of the “treating physician rule” and suggesting that the controversy was not resolved by the 1991 SSA regulations).

ing patent prosecutions.⁷³ Iain Cockburn and others, meanwhile, found that there was a higher probability that the Federal Circuit would invalidate some examiners' patents rather than others'.⁷⁴

The reasons for the agency's ineffectiveness in policing examiner quality can be seen in the recent decision of *Pal v. Department of Commerce*,⁷⁵ which shed light on the agency's monitoring procedures. As part of its quality-assurance programs, the PTO tests its quality-assurance specialists by randomly reviewing a portion of their work to see if they have made any errors.⁷⁶ That random sample revealed errors in the work of Asokkumar Pal, who was then placed on probation. During the probationary period, sixteen of Pal's cases were randomly selected for review, and reviewers determined that there were six errors. The agency deemed this error rate too high,⁷⁷ and Pal was dismissed. The Federal Circuit affirmed the dismissal.⁷⁸

Whatever the merits of Pal's work, the episode reveals how cumbersome it is to dismiss government employees. Two facts in particular stand out. First, Pal was notified of the probationary period during which the fate of his employment would be determined.⁷⁹ Such a process is unlikely to police employees who are lazy or biased because they can temporarily adjust their behavior during this period so as not to be fired. Second, Pal had served in the PTO for more than *twenty-five years* prior to his dismissal and had been promoted to the agency's office of quality review.⁸⁰ It is not reassuring that the agency was not able to determine that Pal was an ineffective employee until after such a long period of service.

That administrative agencies and other lawmakers must choose between rules and standards is a common observation in the jurispru-

⁷³ Douglas Lichtman, *Rethinking Prosecution History Estoppel*, 71 U. CHI. L. REV. 151, 166 (2004).

⁷⁴ See Iain M. Cockburn et al., *Are All Patent Examiners Equal? The Impact of Characteristics on Patent Statistics and Litigation Outcomes* 25 (Nat'l Bureau of Econ. Research, Working Paper No. 8980, 2002) ("Our core finding is that the examiners whose patents are cited most are also more likely to have their patents ruled invalid by the [Federal Circuit].").

⁷⁵ 301 Fed. Appx. 984 (Fed. Cir. 2008).

⁷⁶ *Id.* at 985.

⁷⁷ *Id.* at 986.

⁷⁸ *Id.* at 988.

⁷⁹ *Id.* at 986.

⁸⁰ See *Pal v. Dep't of Commerce*, No. DC-0432-07-0158-I-2, 2007 MSPB LEXIS 6153, at *2 (July 27, 2007).

dence literature.⁸¹ What is interesting, however, is that this tradeoff receives less attention in the literature on private management.⁸² Large organizations do face choices between developing internal rules and allowing more discretion by individual decision makers. Yet particularly in complex areas that are resistant to effective rules, the organizations tend to allow discretion. This might be less problematic in a private than in a public organization because private-sector employees' decisions might affect profits; the employees might thus face direct or indirect consequences from shareholders or owners for making bad decisions. Of course, private organizations might prefer rules or statistical algorithms where they have been shown to be more accurate than individual decision makers. But they should tend to allow more discretion for similar decisions and should at least have stronger incentives to find the optimal balance between rules and discretion in maximizing the benefits of decisions. Finally, private firms have the ability to remain small, which may be the optimal firm size for some discretionary decisions because small size may facilitate effective monitoring.

II. THE EROSION OF THE TRADITIONAL MONOPOLY

The most striking trend in the patenting monopoly is the monopoly's modern decline. In hindsight, it is easy to understand the irresistible force contributing to the erosion of the monopoly: as international trade grows and firms seek intellectual property rights on a global scale, the PTO's exclusive power to issue U.S. patents increas-

⁸¹ Perhaps the best treatment of the difference between rules and standards is FREDERICK SCHAUER, *PLAYING BY THE RULES: A PHILOSOPHICAL EXAMINATION OF RULE-BASED DECISION-MAKING IN LAW AND IN LIFE* (1991).

⁸² The private-management literature recognizes that managers in some industries may have more discretion than those in other industries. See, e.g., Donald C. Hambrick & Sydney Finkelstein, *Managerial Discretion: A Bridge Between Polar Views of Organizational Outcomes*, in 9 *RESEARCH IN ORGANIZATIONAL BEHAVIOR* 369, 381-89 (L.L. Cummings & Barry M. Straw eds., 1987) (asserting sixteen factors that give a chief executive greater discretion). It does not, however, tend to conceptualize this as a tradeoff between rules and discretion, as the legal literature does. This suggests that informal norms and approaches to evaluation can be used to limit discretion and ensure decision-making quality. Moreover, bureaucratic rules and control have traditionally been more important in government than in private entities because these limitations are thought necessary "to keep the politicians and bureaucrats from doing anything that might endanger the public interest or purse." OSBORNE & GAEBLER, *supra* note 31, at 14. Nonetheless, it is commonly understood that "in solving one set of problems [bureaucratic controls have] created another," for the rule-bound governmental bureaucracy must then tolerate the rules' imprecision even when faithful public servants easily determine that application of the rule is inappropriate. *Id.*

ingly requires the agency to examine *all* the inventions of an increasingly technological world. In 1965, foreign inventors accounted for approximately twenty-four percent of patent applications submitted to the PTO.⁸³ In 2008, the foreign percentage edged over fifty percent for the first time.⁸⁴ Even for a rich, technologically sophisticated nation such as the United States, the administrative problem associated with examining all of the world's innovations is eventually bound to outstrip the resources of a nation with just five percent of the global population.⁸⁵

In focusing attention on the swelling number of foreign applications, we do not mean to suggest that foreign applicants should be in any way disfavored or excluded from the U.S. system. We are merely highlighting a glaring inefficiency in the traditional structure of patent systems: national patent offices, both in the United States and abroad, were granted a monopoly not to examine all inventions produced within that nation but rather to examine all inventions sought to be protected within the nation's territory. Since international agreements have increasingly allowed citizens from one country to patent in another, and since the reduction of international trade barriers provides incentives for inventors to seek patent protection in every country,⁸⁶ the traditional structure places an enormous and growing strain on national patent offices.

Relatively small nations have felt this strain first, as such nations could not examine all these innovations unless they devoted a large portion of their public budget to their patent examination system. Yet the administrative strain has been felt even in larger countries like the United States: as the smaller nations have recognized, it is difficult if not impossible to hire a sufficiently large cadre of examiners to perform all the examinations.

This global administrative strain, however, has produced an important side benefit: it forces nations to rethink their patenting mo-

⁸³ See U.S. PATENT & TRADEMARK OFFICE, NUMBER OF UTILITY PATENT APPLICATIONS FILED IN THE UNITED STATES, BY COUNTRY OF ORIGIN, CALENDAR YEAR 1965 TO PRESENT 3 (2008).

⁸⁴ See Jennifer LeClaire, *IBM Remains Patent King, but U.S. Innovation Is Slipping*, NEWSFACTOR MAG. ONLINE, Jan. 15, 2009, http://www.newsfactor.com/story.xhtml?story_id=0330031QDIYU&pose=1 (reporting that U.S. companies accounted for only forty-nine percent of issued patents in 2008).

⁸⁵ See U.S. Census Bureau, U.S. and World Population Clocks—POPclocks, <http://census.gov/main/www/popclock.html> (last visited Apr. 15, 2009).

⁸⁶ See, e.g., Patent Cooperation Treaty, June 19, 1970, 28 U.S.T. 7645, 1160 U.N.T.S. 231.

nopolies. As they do so, they have begun to recognize that it is not sensible for the world's 195 countries to perform 195 separate searches and examinations of the same patent application. Such an approach would be enormously costly and a waste of the world's technically talented individuals.

For at least the last forty years, the solution to the administrative problem has invariably and increasingly been to authorize one patent office to perform the search and examination functions for many offices. Such international work sharing eliminates the obviously duplicative work associated with traditional nation-by-nation examination. But international work sharing also undermines the very philosophy necessary to sustain the patenting monopoly. After all, if the PTO recognizes a prior art search done by the European Patent Office (or, better still, gives some measure of respect to the European opinion on patentability), it becomes difficult to argue that patent search or examination is a core governmental function that must be performed by a duly appointed U.S. official or employee.

International work sharing has brought another revolutionary idea into patent practice—the idea of choice. With each of the implemented or proposed methods of work sharing, the applicant has gained some degree of control over which administrative entity engages in searching and examining her application. Yet precisely because this choice now exists and is likely to grow in the future, nations have to begin considering ways to police the integrity of foreign patent offices, lest one nation race to the bottom by producing searches or patent opinions that unduly favor applicants. If a patent regulator can appropriately police the quality of a foreign governmental patent office, however, then there is seemingly no good reason why those same policing techniques could not be applied to nongovernmental entities.

A. *The National and International Decline of the Patenting Monopoly*

Israel is an excellent example of a nation that has departed from the traditional model under which each nation's patent office held a monopoly on issuing patents within that country. Where an applicant for an Israeli patent has successfully obtained a patent on a parallel application filed in any patent office on a published list, Article 17(c) of the Israeli Patents Law requires the Israeli Patent Office to "deem" the application compliant with the basic validity requirements of

Israeli law (including novelty, nonobviousness, and enablement).⁸⁷ Currently, the list of acceptable patent offices includes the PTO, the European Patent Office (EPO), and the national patent offices of Austria, Germany, Denmark, the United Kingdom, Norway, Sweden, Russia, Japan, and Canada.⁸⁸ Thus, a party seeking an Israeli patent may choose one of eleven foreign patent offices within which most of the examination can occur.

Of course, Israel is a small country and could not hope to hire enough examiners to review all the innovations in the world. Consequently, Israel has taken the principle of demonopolization a bit further than most other countries. Yet the Israeli approach is not unique. The trend toward demonopolization dates back at least as far as the Patent Cooperation Treaty of 1970.

1. The Patent Cooperation Treaty: Undermining the Monopoly

The first significant departure from the traditional structure of the patenting monopoly was the Patent Cooperation Treaty (PCT) of 1970.⁸⁹ The basic goal of the PCT was to create a streamlined process for obtaining multiple patents from many nations. That goal is fundamentally inconsistent with the traditional patenting monopoly because it requires each nation's patent office to cede some authority to foreign offices.

The PCT allows an applicant to file an "international application" in any of the contracting states and to have that application recognized as a regular national patent application in as many contracting states as the applicant elects.⁹⁰ The international application is forwarded to an International Searching Authority, which can be any of more than ten major patent offices throughout the world (e.g., the PTO, the EPO, or the Japanese Patent Office (JPO)). The International Searching Authority conducts the prior art search and opines in writing whether the patent application has satisfied the criteria for patentability.⁹¹ The search report and written opinion provide the ba-

⁸⁷ Patents Law, 5757-1967, I.L. 001EN, art. 17(c) (Isr.), available at http://www.wipo.int/lea/en/text_html.jsp?lang=en&id=2364 (last visited Apr. 15, 2009).

⁸⁸ See Posting of Michael Factor to The IP Factor, Israel Patent Office Relaxes Conditions for Modified Examination, <http://blog.ipfactor.co.il/2009/01/14/israel-patent-office-relaxes-conditions-for-modified-examination> (Jan. 14, 2009).

⁸⁹ See Patent Cooperation Treaty, *supra* note 86.

⁹⁰ *Id.*

⁹¹ PTO, MPEP, *supra* note 53, § 1843.

sis for the international preliminary examination report, which is then sent to the patent offices of all the countries elected by the applicant.⁹² Thus, a single filing can commence patent prosecution in many nations simultaneously, generate an authoritative search report that is recognized by those nations, and produce an expert written opinion on patentability that can be used by the examiners of all national patent offices.

By consolidating the steps of filing, search, and initial examination in a single country, the PCT undermines the notion that these steps are governmental functions that must be accomplished by each individual country. But the PCT does even more. Applicants filing in many countries—even those home to a qualified International Searching Authority—often have the ability to choose from among the International Searching Authorities. For example, a PCT applicant in the United States can select any of four International Searching Authorities—the PTO, the EPO, the Korean Patent Office, or the Australian Patent Office—to conduct the search and to write the initial opinion on patentability.⁹³ Permitting choice creates the possibility that applicants will pick the office that they view as better, which may correspond to more pro-patent, and that the Offices will vie to be viewed as the best by applicants.

2. The EPO

The next major step in demonopolization occurred in 1977 with the creation of the EPO.⁹⁴ The reason for forming the EPO was to create a single patent office that would consolidate the administrative processes of the various national patent offices in European countries.⁹⁵ Yet while this plainly created a large entity with dominant power, the goal of demonopolization was also furthered because many of the national European patent offices survived. These offices found themselves in competition with the EPO, which had a natural advantage because it could grant patents recognized not merely in one but in many countries. To remain in existence, the national patent offices

⁹² *Id.* § 1801.

⁹³ See Patent Cooperation Treaty (PCT) Information, 1337 Off. Gaz. Pat. & Trademark Off. 219 (Dec. 23, 2008), available at <http://uspto.gov/web/patents/patog/week52/OG/TOC.htm#ref1>.

⁹⁴ See European Patent Office, About Us, <http://www.epo.org/about-us/press/backgrounders/epo.html> (last visited Apr. 15, 2009) (describing the origins and purpose of the EPO).

⁹⁵ *Id.*

needed to become creative and entrepreneurial—and that is precisely what they did.

The German Patent Office, for example, markets its services as a “low-cost first examination” that inventors can use to decide whether to pursue the more expensive option of filing an international application (such as an EPO application):

The costs of international patent procedures are high. The procedure at the German Patent and Trade Mark Office constitutes a low-cost first examination which is a particularly suitable option for individual inventors, universities and small and medium enterprises. If you first file with the German Patent and Trade Mark Office, you can decide, on the basis of the examination result, if you wish to incur the high costs associated with international patent procedures.⁹⁶

Two points are worth noting about the German Patent Office’s offer to do a “low-cost first examination.” First, in offering this service, the Office is not exercising any inherently governmental power. The applicant is merely using the Office to obtain a relatively low-cost expert opinion on patentability. If the opinion is negative, the applicant is likely to abandon the effort to patent. If the opinion is favorable, the applicant is likely to file an “expensive” EPO application—but since the EPO can grant a patent valid in Germany as well as in many other European countries, the applicant will almost certainly abandon her German application and concentrate on obtaining a European patent (as well as patents in other nations).

Second, because a foreign or EPO patent must be filed within twelve months of the German application (in order to maintain its priority filing date), the German Patent Office can offer its service only if it is capable of issuing its initial examination report quickly—i.e., in much less than twelve months. The German Patent Office can be seen as responding to competition from the EPO, which also has its main office in Munich. The EPO can offer applicants a much better

⁹⁶ GERMAN PATENT & TRADE MARK OFFICE, PATENTS: AN INFORMATION BROCHURE ON PATENTS 13 (2008), available at http://www.dpma.de/docs/service/veroeffentlichungen/broschueren_en/patents_engl.pdf. The filing fees of the German Patent Office are indeed low compared to those of the EPO. The 2008 basic filing fee was only 50 Euros; the cost of search and examination was only 400 Euros more. *See id.* at 16 (stating that search and examination can be purchased on an à la carte basis for 250 and 150 Euros, respectively). By contrast, EPO filing, search, and examination fees for 2008 were 100, 1050, and 1405 Euros, respectively. *See* European Patent Office [EPO], *Schedule of Fees and Expenses of the EPO (Applicable as from 1 July 2008)*, OFFICIAL JOURNAL (Supp. July 2008) 3-4, available at http://www.european-patent-office.org/epo/pubs/oj008/07_08/supplement_schedule_of_fees.pdf.

product—a patent valid in almost all European countries. Since a patent limited to one country is less desirable, the German Office has found a niche in which it can compete—providing a low-cost search and first examination. For the German Office to succeed, it must be fast—and so it is.

The practices of the U.K. Intellectual Property Office, another of the remaining national patent offices in Europe, also reveal the effects of competition among patent offices. Like the German Patent Office, the U.K. Office has to work in the shadow of the EPO, which offers applicants the ability to obtain patent rights in more than thirty European countries with one filing. How can the U.K. Office survive in the face of such competition? At least part of the answer is that, like the German Office, it is evolving into a provider of expert services. As with the German Office, it charges relatively low fees (approximately 200 pounds, or 220 Euros) for filing an application and obtaining a search and substantive examination.⁹⁷ Furthermore, it can produce the examination report in approximately four months—a dramatically fast time compared to the typical twenty-four-month period for obtaining a first office action from the PTO.⁹⁸

Finally, one of the world's most entrepreneurial national patent offices is Denmark's. Like the German and U.K. Offices, it offers fast opinions on patentability of inventive ideas, and it also provides opinions on the validity of existing patents, which a patentee's competitors might use when deciding whether to challenge an issued patent.⁹⁹ Both services are extraordinarily fast, advertising ten working days as

⁹⁷ See Intellectual Prop. Office, *How Much Does It Cost?*, <http://www.ipo.gov.uk/types/patent/p-applying/p-cost.htm> (last visited Apr. 15, 2009).

⁹⁸ See EUROPEAN PATENT OFFICE, JAPAN PATENT OFFICE & U.S. PATENT OFFICE, *TRILATERAL STATISTICAL REPORT 2007 EDITION 48* (2008), available at <http://www.trilateral.net/statistics/tsr/2007/TS.pdf> (noting that in 2007 the PTO took, on average, 24.9 months from filing to its first office action); Intellectual Prop. Office, *Getting Your Patent Granted More Quickly*, <http://www.ipo.gov.uk/p-fastgrantguide.pdf> (last visited Apr. 15, 2009) (stating that it normally takes four months for the U.K. Office to issue search and examination reports).

⁹⁹ See Danish Patent & Trademark Office, *Novelty Searches*, <http://int.dkpto.dk/business-services/patent-commercial-services/services/novelty-searches.aspx> [hereinafter *Danish Patent & Trademark Office, Novelty Searches*] (last visited Apr. 15, 2009) (offering searches to determine the novelty, merit, and viability of potential patents); Danish Patent & Trademark Office, *Validity Search*, <http://int.dkpto.dk/business-services/patent-commercial-services/services/validity-search.aspx> [hereinafter *Danish Patent & Trademark Office, Validity Search*] (last visited Apr. 15, 2009) (providing a resource for filing a patent opposition or request for revocation).

the normal benchmark for completing the services.¹⁰⁰ Moreover, the Danish Office advertises a general set of “business services” touted as “combin[ing] our search competencies with our knowledge about practices within the areas of rights and legislation.”¹⁰¹ Like a private law firm, the Danish Office urges potential clients to “[t]ake advantage of us being an authority” and having “more than a hundred experts at your disposal.”¹⁰² Also like a law firm, the Office charges its customers by the hour for its professional services.¹⁰³

In sum, the creation of an enormous and centralized European Patent Office has, paradoxically, led to an outpouring of competition among the surviving national patent offices. Patent office competition is now a reality in Europe, and it is having some remarkable consequences.

3. The Patent-Prosecution Highway

Perhaps because national patent offices have become accustomed to relying on the prior searches and examinations of other patent offices, they have become open to permitting additional erosion of their own patenting monopolies by voluntarily relying on the work of other examining offices. The result has been a series of ongoing pilot programs in which the offices share the work associated with parallel applications that are filed on behalf of the same invention in different countries.

While one of the pilot programs simply authorizes the sharing of prior art search reports,¹⁰⁴ the more interesting set of programs, known collectively as the Patent-Prosecution Highway, authorizes the fast-tracking of patent applications found meritorious by another patent office. Currently, the U.S. pilot programs cover eight examining offices: the European Patent Office and the patent offices of Canada,

¹⁰⁰ Danish Patent & Trademark Office, Novelty Searches, *supra* note 99; Danish Patent & Trademark Office, Validity Search, *supra* note 99.

¹⁰¹ Danish Patent & Trademark Office, Business Services, <http://int.dkpto.dk/business-services.aspx> (last visited Apr. 15, 2009).

¹⁰² *Id.*

¹⁰³ See Danish Patent & Trademark Office, Novelty Searches, *supra* note 99 (charging hourly rates of DKK 1050, equivalent to approximately \$190).

¹⁰⁴ Results of prior art searches are currently shared through the “triway” pilot program in which the JPO, the EPO, and the PTO participate. See U.S. Patent & Trademark Office, “Triway” Pilot Program Among the U.S. Patent Office, the European Patent Office, and the Japan Patent Office, http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/triway_pilot_07152008.pdf (last visited Apr. 15, 2009).

the United Kingdom, Japan, South Korea, Australia, Denmark, and, most recently, Singapore.¹⁰⁵

In another initiative, dating back six years, the U.K. Patent Office devised ways to share its workload with other national patent offices.¹⁰⁶ Among these were reliance on examinations conducted by other countries—a process called “mutual exploitation”—and contracting out some examinations to the Danish and Dutch patent offices.¹⁰⁷

While the patent offices participating in these work-sharing efforts are all government run, some are now facing intense competitive pressures and, accordingly, may not be so different from private entities. Consider the Danish Patent Office, which, as previously shown, promotes its services in ways similar to a private entity. As studies of the competition between states to attract corporate charters show, political entities might compete fiercely to win “business.”¹⁰⁸ With eight patent offices participating in the Patent Prosecution Highway, applicants might have significant incentives to forum shop for better examination. A small country like Denmark or Singapore—each of which has a smaller population than New Jersey or Massachusetts—could become the “Delaware” of patent offices, reaping significant benefits from becoming the patent examiner of choice for applicants while realizing only a small share of the worldwide economic effects of the patents that it grants. The PTO will therefore have to develop ways to ensure that other patent-examining offices maintain high levels of quality. If these ways can ensure quality in entrepreneurial gov-

¹⁰⁵ See U.S. Patent & Trademark Office, Patent Prosecution Highway Pilot Program Between the United States Patent and Trademark Office and the Intellectual Property Office in Singapore, http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/sing_pph_20090129.pdf (last visited Apr. 15, 2009) (announcing that, effective February 2, 2009, the Intellectual Property Office of Singapore became the eighth patent office to reach a work-sharing agreement with the PTO under the Patent Prosecution Highway Pilot Program and listing the other seven offices).

¹⁰⁶ See *Patent Office Schemes Target Pendency*, MANAGING INTELL. PROP. MAG. (Managing Intell. Prop., New York, N.Y.), Jan. 26, 2003, <http://www.managingip.com/Article/1326674/Patent-Office-schemes-target-pendency.html> (discussing the U.K. Patent Office’s plans “to prevent duplication of work between national patent offices”).

¹⁰⁷ *Id.*

¹⁰⁸ See William L. Cary, *Federalism and Corporate Law: Reflections upon Delaware*, 83 YALE L.J. 663, 663-66 (1974) (recognizing the power of interstate competition and arguing that such competition leads to a race to the bottom and thus to an undesirably minimal amount of regulation); see also Roberta Romano, *Law as a Product: Some Pieces of the Incorporation Puzzle*, 1 J.L. ECON. & ORG. 225, 280 (1985) (describing a state’s efforts at corporate-law reform as a process of “continuing to revise” its law in order to “service its corporate clientele”).

ernmental offices, they are also likely to work in entrepreneurial private offices.

4. Prosecution Privatization: The PCT-Privatization and Peer-to-Patent Pilot Projects

In 2002, the PTO published *The 21st Century Strategic Plan*, which included the goal of privatizing prior art searches.¹⁰⁹ While the full plan has not yet been implemented because of political opposition,¹¹⁰ a pilot program has started to privatize prior art searches associated with PCT applications.¹¹¹ Under that program, the private firms must also, by the terms of their contracts, perform examination services: they must draft the written opinions on patentability that an International Search Authority (such as the PTO) would otherwise be required to do under the PCT system.¹¹²

Similarly, the PTO is now cosponsoring a project known as “Peer-to-Patent,” which attempts to “crowd source” at least part of the prior art search that the PTO would otherwise do without assistance.¹¹³ Peer-to-Patent also allows private individuals to comment on pending patent applications and thus, in a limited way, privatizes examination functions.¹¹⁴

¹⁰⁹ See U.S. Patent & Trademark Office, *The 21st Century Strategic Plan*, <http://www.uspto.gov/web/offices/com/strat21/index.htm> (last visited Apr. 15, 2009) (stating that the “USPTO will contract with private sector commercial search organizations”).

¹¹⁰ The political opposition has been voiced most fiercely by the examiners’ union. See, e.g., *USPTO Revised Strategic Plan Cedes Control to Private Searches*, POPA NEWS (Patent Office Prof’l Ass’n, Arlington, Va.), Mar. 2003, at 1, 2, available at http://www.popa.org/pdf/newsletters/2003_03.pdf (arguing that the agency’s plan to rely on private searchers “represents a danger to the soundness of the patent system and the principles of integrity upon which it functions”).

¹¹¹ See Letter from Jason E. Taylor, Contracting Officer, U.S. Patent & Trademark Office, to Prospective Offerors (May 5, 2006), available at <http://www.uspto.gov/go/proc/pctsearch3/pct3crltr.pdf> (soliciting contractors to provide PCT search services).

¹¹² See *id.* (“The purpose of this solicitation is to obtain comprehensive services to provide an international search report and a written opinion under the provisions of the Patent Cooperation Treaty (PCT) for international applications in which the United States Patent and Trademark Office (USPTO) is the International Searching Authority (ISA).”).

¹¹³ See U.S. Patent & Trademark Office, *Peer Reviewed Prior Art Pilot*, <http://www.uspto.gov/web/patents/peerpriorartpilot> (last visited Apr. 15, 2009) (announcing the initiative to allow the public to help locate prior art).

¹¹⁴ See Extension and Expansion of Pilot Concerning Public Submission of Peer Reviewed Prior Art, 1333 Off. Gaz. Pat. & Trademark Off. 103, 103 (Aug. 12, 2008), available at <http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/peerreviewexpansion071708.pdf>.

In a meaningful sense then, the U.S. patent system has already undertaken a certain amount of “privatization.” Our goal is to encourage this trend and the development of sufficiently strong incentives so that patent quality is maintained or, better still, improved.

5. Self-Search and Self-Examination

The final set of new initiatives that we discuss encompasses one recently created program and three proposals, all of which impose more burdens on the patent applicant to develop the information necessary to evaluate the application: the new Accelerated Examination Procedure (which requires pre-examination search and support documents) and the proposed Applicant Quality Submissions, Examination Support Documents, and new Information Disclosure Statements. All attempt to require the patent applicant to help in the examination of her own application. The president of the Patent Office Professional Association (the examiners’ union) has rightly recognized that, through these requirements, “[t]he PTO is effectively outsourcing the search of the case to the applicant.”¹¹⁵

We agree with that assessment, but we do not agree that privatizing is wrong in this context. Indeed, the benefits of even partial privatization can be clearly seen in the PTO’s Accelerated Examination Procedure, which requires the patent applicant to submit both a search report and an examination support document that includes a “detailed explanation of how each of the claims [in the application] are [sic] patentable.”¹¹⁶ In fact, the PTO expects the applicant to submit arguments as detailed as those that would be submitted by an applicant *after the examiner’s first office action*,¹¹⁷ thereby suggesting that the program is designed to accelerate examination by pushing the work on first office action from the examiner to the applicant. The applicant can, however, reap a big payoff for doing this extra work. The total pendency time for an Accelerated Application under the

¹¹⁵ Brittany R. Ballenstedt, *GAO: Patent Office Lacks Sufficient Hiring Plan*, GOVERNMENTEXECUTIVE, Oct. 5, 2007, http://www.govexec.com/story_page.cfm?articleid=38231&dcn=todaysnews (quoting Robert Budens).

¹¹⁶ U.S. Patent & Trademark Office, Guidelines for Applicants Under the New Accelerated Examination Procedure 5, http://www.uspto.gov/web/patents/accelerated/ae_guidelines_120607.doc (last visited Apr. 15, 2009).

¹¹⁷ *See id.* (cross-referencing the standards in 37 C.F.R. § 1.111, which define the amount of detail that must be presented as part of an applicant’s response to a first office action).

new program is 296 days, not the two, three, or more years typical for patent applications generally.¹¹⁸

B. *Further Steps Toward Demonopolization*

The challenge for the future is to continue on the path toward demonopolization. Here we consider some possible ways to achieve that goal.

1. Intragovernmental Competition

One possibility would be to foster competition within the government, either by creating alternative patent offices (just as both the DOJ and the FTC have jurisdiction over antitrust regulation) or, more likely, by fostering competition among examiners. Such mechanisms seem unpromising as permanent solutions, however, because the agencies' motives for competing, as well as their goals in the competition (if, in fact, they chose to compete), would remain wholly speculative.

2. Intergovernmental Competition

Another possibility would be for the U.S. patent system to expand the approach of the Patent Prosecution Highway and allow increased intergovernmental work sharing. Following the example of Israel and other nations, the PTO could decide which patent offices are sufficiently reliable and then offer some official degree of deference to the foreign entities' decisions. Through this mechanism, a form of governmental competition similar to cooperative federalism could emerge. This approach might, however, raise legitimate concerns. First, each national bureaucracy might face some of the bureaucratic problems identified in Part I, although the existence of competition might provide further impetus to reform. Second, and more significantly, there would be a danger of triggering a race to the bottom. The PTO might be able to limit this somewhat by essentially setting a floor. Nonetheless, such an option would inevitably become entangled with larger issues of international politics and diplomacy. The United States might, for example, be unwilling to decertify a country's patent office if that country were simultaneously helping the United States in an unrelated military or diplomatic matter.

¹¹⁸ See U.S. Patent & Trademark Office, Accelerated Examination Statistics, http://www.uspto.gov/web/patents/accelerated/ae_stat_charts.pdf (last visited Apr. 15, 2009).

3. Private Examination

A more complete version of demonopolization would allow a larger role for private firms in shouldering the burden of examination. As a first step, a favorable private-examination opinion could be a prerequisite to filing a patent application; such a private opinion would have to be obtained from a set of firms approved in advance by the government. The governmental patent office could then examine those opinions, issue patents where the opinions were sound, and consider decertifying private examiners that issued too many unacceptable patenting opinions. In addition, the office could make its degree of deference depend in part on the quality of evaluation provided by the private firms.

III. MAKING DEMONOPOLIZATION WORK

The PTO's status as a government agency, we have argued, limits its effectiveness both as a producer of a service and as a decision maker on patentability.¹¹⁹ Responding to the production challenge, the PTO has, with good sense, increasingly moved to outsource the time-consuming task of searching for prior art. Although the PTO has not yet outsourced all of its search and examination functions, we have shown both that the PTO has already outsourced to some degree and that other countries have done so to a greater degree. We have also sketched some steps that the PTO might take in the direction of demonopolization.¹²⁰ This proposal is only a small step beyond the existing process employed in the new Accelerated Examination Procedure, with the key differences being merely (1) that the opinion concerning patentability would be supplied by a firm (or expert) independent of the applicant's lawyer, and (2) that the PTO would monitor the performance of the opinion writers to ensure quality.

We have not yet addressed, however, what we anticipate to be the core objection to our proposal: that privatized patent-examining entities cannot be trusted to make appropriate decisions on patentability. While some might worry that private entities lack the expertise to make such decisions, we are skeptical of such a claim. Private companies could, after all, hire examiners from the PTO or from other entities with similar examining experience. Perhaps the PTO would have an initial advantage in competition by virtue of its large and experi-

¹¹⁹ See *supra* Part I.

¹²⁰ See *supra* Section II.B.

enced workforce, but it seems likely that some private firms would develop the expertise to compete with the PTO in the long run. At the very least, that has been the general historical trend with demonopolization. Countries that have demonopolized their postal services, for example, have experienced effective competition, although the public entities are so entrenched that they might survive.¹²¹

The more significant concern is that private entities would not have the appropriate incentives to make correct decisions on patentability. Indeed, the most obvious concern is one that we addressed in connection with the possibility of allowing patentees to choose a governmental patent office, namely, that there might be a race to the bottom. If any private entity were entitled to make final decisions on patents simply by hiring trained staff and writing up the appropriate documentation, private firms might race to become rubber stamps. F. Scott Kieff has argued that the PTO should return to being simply a repository for filings, as it was in the late eighteenth and early nineteenth centuries, thereby leaving difficult decisions to the judicial process.¹²² Our intent here, however, is not to implement a return to a patent “registration” system under the guise of demonopolization. If there were no way to ensure that private parties would have appropriate incentives to reject patents, true demonopolization would not be possible.

We believe, however, that providing appropriate third-party incentives is possible. A private firm in the business of granting patents must be made to believe that rendering accurate decisions is in its interest. In particular, we must ensure that a private patent-examining firm will suffer financial loss if it grants patents to inventions that should not be patentable. A variety of complementary approaches can ensure this result. The PTO might have power to decertify third-party firms that grant patents too easily across the board or that are excessively tough on garden-variety patents but grant valuable patents too easily. Tort damages might also have some role, though our inclination is to limit them to cases of fraud.¹²³ It would also be possible to impose more direct incentives. For example, the PTO might ran-

¹²¹ See R. Richard Geddes, Policy Watch, *Reform of the U.S. Postal Service*, 19 J. ECON. PERSP. 217, 226-29 (2005) (describing the successful experiences of Germany, Sweden, and New Zealand in challenging their government monopolies, but pointing out that an incumbent government entity “retains substantial market power”).

¹²² See F. Scott Kieff, *The Case for Registering Patents and the Law and Economics of Present Patent-Obtaining Rules*, 45 B.C. L. REV. 55, 71 (2003) (proposing a system of patent applications that would be filed with, but not examined by, a patent office).

¹²³ See *infra* subsection III.A.1.a.

domly review a small subset of each private firm's patent-examining decisions; if the PTO disagreed with a decision, applying its current standard of patent validity, a high fine would be imposed. In addition, Congress could authorize private attorneys general to challenge privately issued patents, with the challenger reaping the penalties imposed for invalid patents.

If some combination of these or other approaches could give private parties appropriate incentives to grant patents, those patents should be subject to the same presumption of validity that current patents receive in courts. A privatized system could also be designed to have different tiers of presumptions, like the proposal for gold-plated patents.¹²⁴ Initially, if there were suspicion that obtaining patents through private provision might be too easy, private provision could be allowed only with a low—or no—presumption of validity. On the other hand, if obtaining patents through private provision were more difficult, as we believe could be the case, perhaps privately obtained patents would have as high a presumption of validity as patents obtained through traditional means, if not a higher presumption. The PTO might also be able to set different presumption levels based on the established effectiveness of different private-provision models or different private providers.

We detail our proposal and its various alternatives as follows: In Section IV.A, we consider different regulatory approaches that could generate appropriate private-party incentives for granting patents. We first consider relatively traditional approaches, including a system similar to that applied to financial auditors. While this approach is plausible, especially if the PTO were to retain a robust certification role, it might be difficult to optimally calibrate incentives. A second possibility would be to impose penalties when patents are found to be invalid. This approach might work most effectively in conjunction with a private-attorneys-general scheme. Finally, we consider more radical policies, including self-certification of patents by patent applicants and the use of a decentralized prediction market.

We then address in Section IV.B questions about the role of the PTO in such a system. We argue that the component of the PTO that issues patents would ideally be treated like any private provider. If the PTO erred too much on the side of granting patents, then an option to obtain patents privately would not be of much use, unless private providers were cheaper or faster. In any event, the PTO would retain

¹²⁴ See Lichtman & Lemley, *supra* note 49.

important functions. For example, it would serve as the public repository for public filing and for publication of patents. Ideally, patents would be published at the time of application with any private provider. The PTO could also continue to have a role in resolving interferences, although a change in the law to a first-to-file system would make this unnecessary.¹²⁵ Finally, the PTO could also continue to conduct reexaminations, though it might be possible to develop a private equivalent even for this.

A. *Private-Party Incentives*

1. Traditional Approaches to Regulating Gatekeepers

a. *Tort Damages*

Courts could help to police patent-examining firms in much the same way that they currently discipline auditing firms: through tort liability. A firm that was issued a patent later held invalid could sue to recover some of the lost expenses made in reliance on the validity of the patent. For this regime to work, the law would need to preclude the firm that received the patent from waiving its right to sue the patent-examining firm. Perhaps a more promising approach would be to allow firms that were victimized as a result of erroneously granted patents to sue the firm that granted the patent. For example, a patent licensee could sue the patent grantor if the patent were later held invalid, or a firm accused of unknowing infringement could cease the infringement and sue the patent grantor for damages stemming from the cessation of activity.

Such an approach would put serious constraints on patent-examining firms, but it would be difficult to ensure that the constraints are of the right strength. Whether the constraints are too strong or too weak might depend in part on the standard of liability. In an analogous financial context, Jeffrey Manns suggested that the standard of liability for gatekeepers who rate debt should be gross negligence.¹²⁶ If the standard of liability for patent-examining firms

¹²⁵ See ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 65-66 (4th ed. 2007) (noting that, in the last several years, Congress has repeatedly considered yet failed to enact bills to change the U.S. patent system to a first-inventor-to-file rule of priority).

¹²⁶ Jeffrey Manns, *Rating Risk After the Subprime Mortgage Crisis: A User Fee Approach for Rating Agency Accountability*, 87 N.C. L. REV. (forthcoming 2009), available at http://ssrn.com/abstract_id=1199622.

were gross negligence, however, a private firm might conclude that it could still grant many patents that an optimally functioning public agency would not grant, so long as it developed a paper record sufficient to make its decisions seem plausible. Thus, a strict-liability standard might seem appropriate, for it would effectively force the patent-examining agency to internalize the cost of its mistakes.

Optimal internalization, however, would be difficult to achieve. From a social-welfare perspective, the costs of an inappropriate patent grant would include the deadweight losses associated with the higher prices that consumers would be charged, offset by the social benefits derived from any increased incentives to invent. This would, of course, be only the beginning of an accounting, as the literature measuring the costs and benefits of patent protection is voluminous. It would be much more straightforward to equate the damages to what some private party suffered, for example, by ceasing operations or by “inventing around” after being threatened with a patent. Nonetheless, there is no inherent reason why these damages would provide the socially optimal amount of deterrence.

It is possible, for example, that with a strict-liability standard, or even a negligence or gross-negligence standard, there might be such a high prospect of damages that no private firm would issue a patent. Suppose, for instance, that an inventor claimed to have invented a new, cheaper process for creating graphene, an important building block for nanotechnology. Further suppose that a patent-examining firm considering the application was ninety-five-percent confident that a court would consider the invention nonobvious, but it recognized a five-percent chance that a court would conclude that a person of ordinary skill in the art would have thought the invention obvious.¹²⁷ If this were a valuable technology in an important, emerging technology area, the potential damages in that five-percent scenario might be immense. Perhaps the private patent-examining firm would conclude that whatever additional business that it would receive from granting the patent would be outweighed by the expected damages.

Indeed, we suspect that, for valuable patents,¹²⁸ private firms would be hesitant to grant all but the most ironclad applications. As a result, patentees with valuable patents would presumably file with the

¹²⁷ See 35 U.S.C. § 103(a) (2006) (establishing nonobviousness as a condition for patentability).

¹²⁸ See generally John R. Allison et al., *Valuable Patents*, 92 GEO. L.J. 435, 438 (2004) (identifying the key characteristics of litigated valuable patents).

public patent office. The public patent office, meanwhile, could have a smaller workload and could concentrate on some of the most important cases. Ideally, however, demonopolization would allow competition for both valuable and nonvaluable patents. Moreover, even in cases of considerably less valuable patents, expected damages could be greater than a typical examination fee. This points to yet another problem with this regime—expected damages would simply raise the fee that the private patent-examining firms would charge. Firms considering whether to patent might find the price to be too high. In theory, this might be done optimally as well, so that it would effectively be the patent-seeking firms that were forced to internalize the costs of bad patents. In reality, however, we doubt that it would be possible to calibrate any system predicated on traditional notions of tort damages to provide consistently optimal incentives.

b. *Decertification*

The only way to salvage such a proposal, we believe, would be to insist on something akin to a gross-negligence standard of review, to limit damages (perhaps by capping them at some multiple of the fees), and to allow the PTO to play an aggressive role in its certification capacity. The PTO could perform this role effectively. The task of assessing a few private parties would not be as intensive as making decisions on every individual patent application. We rely on government certification in other areas, such as financial accounting of publicly traded companies.¹²⁹ The costs associated with government decertification could be great, as evidenced by the collapse of Arthur Andersen after the Enron scandal.¹³⁰ Private firms thus have strong incentives to avoid decertification.

Nonetheless, it is important not to rely too heavily on the assumption that the PTO would perform its decertification task well. As the Enron scandal shows, sometimes private gatekeepers succumb to profit-making pressures despite the possibility of decertification. For example, the certification agency might effectively be captured by private interests. Moreover, if the PTO aggressively decertified firms, the remaining firms would have strong incentives to create a trade associa-

¹²⁹ See Pub. Co. Accounting Oversight Bd. (PCAOB), *Our Mission*, <http://www.pcaobus.org> (last visited Apr. 15, 2009) (providing information on the nonprofit board created by the Sarbanes-Oxley Act of 2002 “to oversee the auditors of public companies”).

¹³⁰ See *Texas Board Revokes Andersen’s License*, N.Y. TIMES, Aug. 17, 2002, at C14.

tion to lobby for less aggressive treatment. It is unclear what the balance of power would thus be; some firms would have incentives to lobby against patent leniency, but there would be at least a danger that government policy would be too generous to patent-examining firms and thus to patent applicants. For instance, some experts noted that, before Enron, auditors lobbied Congress to prevent aggressive regulation.¹³¹

Auditing of financial statements is different enough from granting patents that we should not place too much weight on the financial experience. Nevertheless, the differences should arguably make us more skeptical of the sufficiency of certification in the patent context. The danger in the patent context would probably not be the approval of clearly invalid patents, which would surely be struck down in litigation anyway;¹³² the danger would be granting patents with a chance of surviving judicial scrutiny. In such situations, it would be unlikely that the PTO would find a smoking gun that it would deem sufficient to justify decertification. For the PTO to perform its decertification task well, it presumably would want to consider the proportion of patents issued by a firm that were struck down by a court or to review a random sample of patents issued by the private parties, as it currently does when reviewing its own examiners.¹³³ Once the PTO implemented those reviews, however, it would make sense to develop calibrated financial incentives based directly on them rather than to discipline based solely on a crude binary decision about whether the patent-examining firm could remain in business.

2. Penalty-Based Approaches

a. Penalties Based on Court Actions

As one example of a penalty-based approach, the PTO could provide a schedule of fines that a patent-examining firm would need to pay if any patent that it issued were later invalidated by a final judg-

¹³¹ See MINORITY STAFF OF H.R. COMM. ON GOV'T REFORM, 107TH CONG., HOW LAX REGULATION AND INADEQUATE OVERSIGHT CONTRIBUTED TO THE ENRON COLLAPSE (2002).

¹³² See generally Joseph Scott Miller, *Building a Better Bounty: Litigation-Stage Rewards for Defeating Patents*, 19 BERKELEY TECH. L.J. 667, 670 (2004) (acknowledging that many commentators "take comfort . . . from the fact that the courts, guarding against Patent Office errors, have the power to strike down invalid patents during litigation").

¹³³ See U.S. PATENT & TRADEMARK OFFICE, PERFORMANCE AND ACCOUNTABILITY REPORT FISCAL YEAR 2006, at 16 (describing the procedure for reviewing patents issued by PTO examiners).

ment of a court. It would not make much sense to use a fixed schedule of fines, however. If a patent-examining firm faced a \$1 million fine for issuing a bad patent, for example, the firm would simply increase its fees. Thus, if the firm thought that there was an eighty-percent chance that a court considering the issue would find the patent to be invalid and that there was a fifty-percent chance that the issue would indeed be litigated, it would anticipate expected damages from granting the patent to be \$400,000. It might therefore be willing to grant the patent for a fee in excess of \$400,000, which is a relatively trivial amount for valuable patents. Of course, the patent-examining firm would presumably make its decision after accepting its fee from the private party, and the law could require this. Nonetheless, by simply charging high fees, a patent-examining firm could signal that it is the place to which one should go for questionable patents and thereby develop a reputation as an overly eager grantor of patents.

Accordingly, it would make more sense for the PTO to base its fines on some multiple of the firm's fees. Ideally, the multiple would take into account the probability that the patent would be litigated. As the above example indicates, however, even a multiplier of 2.5 might be insufficient to produce optimal behavior by private firms. One approach might be to set the damages multiplier at the level where the patent-examining firm would be indifferent toward granting or not granting the patent if a court considering it would have a fifty-percent chance of finding it valid. This approach would encompass two different possibilities: the fee could be paid regardless of whether the private firm granted the patent, or the fee could be paid only if the private firm granted the patent.

The first approach might seem more intuitive, but, in fact, it would be difficult to optimize incentives. On one hand, once the fee were paid, the patent-examining firm would have no incentive to issue the patent. Issuing the patent could lead to liability if there were any danger that the patent would be found invalid, while rejecting the patent would ensure that the firm would not face liability. On the other hand, the patent-examining firm could have an undesirable incentive to grant patents despite potential penalties because doing so could encourage other would-be patentees to bring their business to the firm. The patent-examining firm would like to earn even the business of those offering weak patents applications, because once these individuals or entities paid the fee, the firm could keep the money. Only by happenstance would these negative incentives balance the positive incentives.

There could be, moreover, a more subtle problem: that a patent-seeking firm would use weak patent applications as a mechanism to make side payments to the patent-examining firm. Suppose that the patent-seeking firm had one valuable patent application. It might draw up a number of additional weak patent applications. The implicit deal could be that the patent-examining firm would reject the weak applications and grant the valuable application, even if that valuable application would likely be found invalid if examined by a court. This deal would be worthwhile to the patent-examining firm. It would face no liability from the weak patents that it properly rejected, but the extra fees that it received from the weak patents would not be counted as part of the fees for the strong patent when those fees were multiplied to determine liability if the patent were found invalid. Hence, a patent-examining firm might seek to develop a reputation for granting questionable valuable patents if they were accompanied by other business for which the firm was overpaid.

The second approach would largely solve these problems. If the firm received its fee only if it granted the patent, it would carefully balance the benefit of granting the patent against its costs. If p represents the probability that a court would eventually consider the validity of the patent, the formula $2/p$ could be used to set damages if the patent were ever held invalid. Thus, if the firm issued a patent with a fifty-percent chance of being upheld and there were a fifty-percent chance that it would be litigated, the damages multiplier would be four. In expected value terms, there would be a twenty-five-percent chance that the firm would have to pay four times the amount that it received for granting the patent. Meanwhile, it would become much harder to manipulate the system with implicit contracts to apply for weak patents along with strong ones.¹³⁴ The weak patents could not be used to launder side payments because the weak patents either would be rejected or, if accepted, could subject the patent-examining firm to fines.

We recognize that there are drawbacks to this approach. A firm might have to spend time considering a patent application before determining that it would not be able to proceed, though it would not be able to charge a fee for its service. In effect, these fees would be passed along to those granted patents. It might seem perverse to make those with legitimate patent applications effectively pay the fees of those whose applications were insufficiently strong. But other legal

¹³⁴ There would still be some possibility of manipulation, however. See *infra* text accompanying notes 148-165 (explaining the problem and discussing solutions).

markets deal similarly with this problem without too many adverse consequences. For example, contingency-fee lawyers must screen clients to determine which ones to take on, typically without charging those whose cases they refuse to bring.¹³⁵ Moreover, some independent firms might develop specialized roles for assessing the quality of patent applications without granting patents themselves (indeed, this is a role that the German Patent Office is already playing¹³⁶). These firms could shoulder much of the analysis burden, and the patent-granting firms would then have incentives to consider their reputation.¹³⁷

With this system, we would foresee some continuing regulatory role for the PTO even after demonopolization. The PTO would still function as a certification agency for the private firms. It would still need to ensure that the private firms could pay any fines stemming from poor decision making, lest a judgment-proof firm happily issue patents. It ideally would also be granted a prosecutorial role to investigate any private firms that might have received undocumented side payments from patentees. While corruption is not thought to be a problem at the PTO,¹³⁸ we recognize that the dangers might be greater with private provision of patents and increased investigatory resources might be appropriate. There are other possible roles that the PTO might fill.¹³⁹ Ideally, the PTO's regulatory functions would be segregated from its production function so that the regulators of the patent process would not be biased in favor of the public patent provider.

At least one regulatory task, however, might be sufficiently difficult such that reliance solely on the results of adjudications in courts might be inadequate. Even with fees that must be paid only when patents are privately granted, the PTO, in determining the appropriate multiplier, must estimate p . Although it could estimate this prob-

¹³⁵ See, e.g., Kevin Miller, *Lawyers as Venture Capitalists: An Economic Analysis of Law Firms that Invest in Their Clients*, 13 HARV. J.L. & TECH. 435, 458-60 (2000) (discussing the advantages and disadvantages of contingency-fee arrangements).

¹³⁶ See *supra* text accompanying note 96.

¹³⁷ See *infra* text accompanying notes 148-165 (discussing the increased risk of third-party scrutiny of a private firm's patent grants and subsequent monetary penalties once a reputation for dubious patent grants has been developed).

¹³⁸ PTO employees are subject to a lengthy list of ethics rules promulgated by a special ethics division of the agency's office of the general counsel. See ETHICS DIV., U.S. PATENT & TRADEMARK OFFICE, SUMMARY OF ETHICS RULES (2000), available at <http://www.uspto.gov/web/offices/com/advisory/acrobat/pto2000e.pdf>.

¹³⁹ See *infra* Section III.B. (discussing the potential continued role of the PTO in handling continuations, interferences, and reexaminations, among other issues).

ability on the basis of a broad universe of patents, the expectation would vary considerably from patent to patent.¹⁴⁰ More valuable patents, for example, would be more likely to be litigated. As a result, a relatively low damages multiplier would be appropriate for these patents. Even more problematic, the probability of litigation presumably depends on the validity of the patent itself, as borderline patents would also be more likely to be litigated.¹⁴¹ The PTO, however, would not be saving itself much work if it had to assess the validity of each patent in order to determine the appropriate damages multiplier for that patent.¹⁴²

More realistically, the PTO would need to assess damages ex post. The PTO would collect data on all patents found invalid in court. For each, it would initiate a proceeding against the firm that granted the patent. Such firms might be required to carry insurance, in which case the insurer might serve in the patent-examining firm's place. The PTO would then need to calculate the subjective-probability estimate that officials in the patent-examining firm had about the possibility of litigation; it would set the multiplier accordingly (e.g., to twice the inverse of this amount).

Tort scholars have suggested that punitive damages should be set using a similar formula (i.e., by multiplying the harm by the inverse of the probability that a tort would be detected and successfully prosecuted).¹⁴³ Critics, however, have complained that courts and, in par-

¹⁴⁰ See Allison et al., *supra* note 128, at 466 n.131 (noting that approximately 1.5% of all patents are litigated but that certain subsets of patents may be litigated more frequently).

¹⁴¹ Cf. Lee Petherbridge, *Positive Examination*, 46 IDEA 173, 176 (2006) (noting the potential transaction costs incurred by litigation of questionable patents).

¹⁴² Cf. Jacob Birnbaum, *The Case for the U.S. Patent and Trademark Office's Adoption of an Open-Source "Bounty" System for Reviewing Business Method and Software Patents, in Light of the Patent Infringement Battles Featuring the U.S. Financial Exchanges that Have Been Waged in Recent Years*, UCLA J.L. & TECH., 2006, ¶ 5, http://www.lawtechjournal.com/articles/2006/01_060707_birnbaum.pdf (stating that financial exchanges have spent millions of dollars litigating infringement suits); David G. Barker, Student Article, *Troll or No Troll? Policing Patent Usage with an Open Post-Grant Review*, DUKE L. & TECH. REV., 2005, ¶ 19, <http://www.law.duke.edu/journals/dltr/articles/pdf/2005dltr0009.pdf> (advocating an "open post-grant review" as an "alternative to costly litigation" for invalidating improperly used patents).

¹⁴³ See, e.g., A. Mitchell Polinsky & Steven Shavell, *Punitive Damages: An Economic Analysis*, 111 HARV. L. REV. 869, 889 (1998) ("[T]he total damages imposed on an injurer should equal the harm multiplied by the reciprocal of the probability that the injurer will be found liable when he ought to be." (emphasis omitted)).

ticular, juries might have trouble applying this formula.¹⁴⁴ We suspect that the PTO could learn the theory behind the formula but that individualized assessments would be difficult to make. This is partly because of the danger of hindsight bias¹⁴⁵ and partly because ascertaining someone else's estimate of a probability that is itself hard to compute is an inherently difficult task.

If the PTO set the multipliers too low or too high, then, in the long term, it might become too easy or too difficult to obtain patents. Perhaps the PTO could gradually improve over time and adjust its multipliers based on its perception of whether private patents were too easy or too difficult to obtain, but the success of demonopolization would then depend heavily on the PTO's successful use of this new patent-policy lever. We thus believe that it likely makes more sense for the PTO to use existing litigation in another way. Rather than mechanically imposing fines based on the result of litigation, it should monitor litigation to determine whether a patent-examining firm might be behaving inappropriately. At the same time, the PTO might develop a separate, systematic approach to imposing fines on private grantors who are too lenient in accepting applications.

b. *Randomized Board Review*

We have shown that a significant difficulty associated with issuing penalties based on the results of actual adjudication is that the PTO would need to estimate, either *ex ante* or *ex post*, the probability that the validity of the patent would be litigated. There is a straightforward approach to avoiding this difficulty, however. The PTO itself could randomly review some fraction p of patents issued by private parties and administer fines if it determined that a patent ought not to have issued. This review might be accomplished by a body like the Board of Patent Appeals and Interferences.¹⁴⁶ Because p would now be set exogenously, it would be straightforward to set the fine at the fee level multiplied by $2/p$. (As before, fees would be paid only when the patents actually issued.) This would generally give private patent-

¹⁴⁴ See W. Kip Viscusi, *Punitive Damages: How Jurors Fail To Promote Efficiency*, 39 HARV. J. ON LEGIS. 139, 141 (2002) (finding that jurors "fail to implement the guidance offered by the Polinsky-Shavell formula[]").

¹⁴⁵ See *id.* at 150 ("[J]urors may use the information conveyed by an accident in judging behavior as if they knew all along that a particular activity was risky.").

¹⁴⁶ The Board of Patent Appeals and Interferences was created by 35 U.S.C. § 6 (2006). The Board's responsibilities include (1) review of *ex parte* appeals from adverse decisions of examiners, *id.* §§ 134, 306, 315, and (2) priority determinations, *id.* § 135.

examining firms a direct incentive to issue patents if and only if they believed that there were more than a fifty-percent chance that the Board would conclude that the patent should issue.

We envision setting p at approximately 0.01 to 0.05, though we acknowledge that this range is not the result of a rigorous cost-benefit analysis. Ideally, p would be low enough to allow the Board to conduct a thorough review of patentability, one more intense and thoughtful than is currently possible. But if p were too low, it could become difficult for patent-examining firms to establish to the satisfaction of the PTO that they were not judgment-proof. With p set at 0.01, a firm would have to pay 200 times the fee for any single granted patent if the firm made a mistake. Because more than one patent might, by chance, be put up for review at the same time, substantial cash reserves might need to be set aside.

We have thus far assumed that whether fines should apply is a binary choice: a patent is either valid or invalid, and fines accrue only if the patent is found to be invalid. A patent, however, might contain numerous claims, and it might have some relatively minor infirmities. It might thus be sensible for the public decision maker to assess patent validity across a continuum. For example, in striking down a single claim, the decision maker might announce that the patent was ninety-percent valid; if so, then only ten percent of the fines would apply. Under this approach, however, it would be important for the public decision maker not to measure proportional validity using too mechanical a method (for example, by calculating the percentage of claims upheld). Some claims might be more economically significant than others, and this should be considered in assessing the fine amount. It is possible, of course, that errors might be made in calculating these percentages, but these should tend to balance each other out. If there were systematic errors, it could sometimes be in the patent-examining firm's interest to include a claim more likely than not to be struck down. We are not too worried about this problem, however, in part because the private-attorneys-general mechanism described in the next subsection should help address any remaining problems.

This mechanism has some limitations, but, before identifying them, we address some preliminary questions and objections. One concern is that these fines would effectively serve as taxes on innovation.¹⁴⁷ Even a firm acting in good faith would expect to sometimes be

¹⁴⁷ Some have argued that the expense of the patent system is itself a tax on innovation. See JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BU-

fined based on a reasonable disagreement, and the cost of these fines would be passed on to patent applicants in general. There is, however, a simple solution to this problem: any fines paid over a particular year could be placed into a fund. This fund would be shared among patent applicants whose granted patents were found to be valid during this process, in proportion to the fees paid and, thus, to the penalties at stake in the cases in which the granted patents were found to be valid. It would be important that the amounts be paid to patent applicants rather than to the patent-examining firms; otherwise, it would be necessary to raise the penalties on the patent-examining firms even higher to ensure that their incentives were appropriate. We would, however, allow patentees to sell their rights to these payments to third parties. Under this approach, the transaction costs associated with these reviews would function as a tax on innovation, but the fines themselves would not. Indeed, they would tend to redistribute money from those with dubious patents to those with sound patents.

One important question is how to conduct the adjudication determining the validity of the patent, as well as its consequences. There would be at least two parties with something potentially at stake in the adjudication: the patent-examining company and the patent applicant. We believe that it would make more sense to rely on the patent-examining company to defend its decision than to rely on the original patent applicant, though this is a close call. At times, the original patent applicant might no longer be interested in commercializing the patent or might not have enough at stake to spend money defending its decision. At other times, the applicant might have so much to lose that it would spend amounts disproportionate to the fines at stake for its representation. The spending of the patent-examining company, meanwhile, would be roughly in proportion to the fines at stake. If we relied entirely on the patent-examining company, however, it would make sense to provide that the validity of the patent would not ultimately be affected by the decision of the PTO. That is, the purpose of the PTO proceeding

REAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 145 (2008) (noting that, in some industries, the litigation costs from patents amounted to a greater percentage of research and development (R&D) than did the profits from the patents such that “patents acted as a net *tax* on R&D”); John H. Barton, *Issues Posed by a World Patent System*, 7 J. INT’L ECON. L. 341, 345 (2004) (arguing that in a patent system where applicants can file in multiple jurisdictions, the resulting duplication and waste amount to “an unnecessary tax on innovation”). Thus, while the expense may be a necessary tax, it nonetheless might make sense to provide some form of tax relief where possible.

would be entirely to discipline the patent grantors, and there would be no collateral-estoppel effect in any patent litigation.¹⁴⁸

Another question is whether patent-examining firms would be allowed to purchase insurance to cover the contingency of having a patent selected for review. One possibility would be that insurance would pay the fines for which the patent-examining firms were responsible. An alternative would be that insurance would cover only the costs associated with defending before the Board the patents that they granted. The danger of permitting insurability of the fines would be that it might encourage moral hazard.¹⁴⁹ A firm that knew that it was insured might prefer to be able to take a fee by granting a patent. On the other hand, insurance companies would have incentives to monitor patent-examining firms both before issuing insurance and after any Board consideration, and they could then change rates. The insurance literature has long recognized that by setting rates, insurance companies can perform a monitoring function.¹⁵⁰ In this context, if there were a danger that some patent-examining firms would be too lenient or that adverse selection would make the bad patent-examining firms especially likely to seek insurance,¹⁵¹ insurance companies would likely be especially careful in setting rates and making decisions on issuing insurance. We take no firm position on whether insurance should be permitted. If it were, however, one benefit would be that the number of patents reviewed for validity could be kept small (i.e., p could be low) because the higher risks associated with such a system could be insured.

Whatever the value of p and, thus, of the penalty multiplier, we must determine whether this penalty system would be used to disci-

¹⁴⁸ If the proceeding uncovered some evidence of abuse or manipulation of the process, the PTO might then retain some right to revoke patents. *See supra* subsection III.A.1.b (discussing PTO decertification).

¹⁴⁹ *See* KENNETH S. ABRAHAM, *DISTRIBUTING RISK: INSURANCE, LEGAL THEORY, AND PUBLIC POLICY* 14 (1986) (“Moral hazard is the . . . tendency of an insured to underallocate to loss prevention after purchasing insurance.”).

¹⁵⁰ *See id.* at 48 (noting that insurance pricing can promote cost internalization, but that its effectiveness and accuracy may be weakened by lack of reliable data); Michael Abramowicz, *Predictive Decisionmaking*, 92 VA. L. REV. 69, 79-80 (2006) (describing how obtaining insurance to cover a given eventuality provides a method for achieving full cost internalization).

¹⁵¹ *See* George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 493-94 (1970) (explaining the adverse-selection problem); *see also* Michael Abramowicz, *On the Alienability of Legal Claims*, 114 YALE L.J. 697, 743-45 (2005) (arguing that “[a] market for claims is likely to be beset by an adverse selection or ‘lemons’ problem”).

pline both the search function and the decision function of the private patent grantor or only the latter. The mechanism is designed to optimize the decision whether to grant a patent rather than to focus on the quality of the patent search itself. It is possible that a firm would perform a patent search meeting general professional standards and that either that firm or another firm relying on the first firm's search and reputation would reasonably conclude, given that search, that the patent should be granted. One could imagine one regulatory system to regulate patent searches and a separate system to regulate patent decisions, whether or not these two functions were provided by the same firm. Under such an approach, the Board would make wholly independent decisions about whether to impose fines based on an inadequate search and based on reaching the wrong ultimate decision because of a particular search.

Such an approach, however, would have serious difficulties; it would be more sensible for the entire penalty mechanism to be based on whether the patent would have been granted by the Board. It might be difficult to develop a suitable metric for determining what professional standards patent searches should meet. The Board might be able to develop reasonable professional standards, but the incentives of the search firms would then be to conduct a search no more thorough than necessary to meet the Board's standards. We prefer to give search firms incentives to conduct searches to the extent that doing so might be helpful in forecasting whether the Board would ultimately approve the patent. It would generally (though not always) be efficient for patent-search and patent-grant decisions to be conducted by the same parties, because a substantial investment would be required to understand the patent application and the prior art. This approach would give incentives to optimize the search.

This leaves a significant question: whether the fees that would be calculated by the multiplier to produce fines in cases of error would be based only on fees for the decision or on fees for the search as well. If separate firms were performing the search and decision tasks, the correct answer would clearly be that only fees associated with the decision should be figured into the multiplier. A patent applicant might pay the first firm for the search regardless of whether the second firm ultimately approved the patent. If the two firms were independent, the second firm's incentives would only be to obtain fees for itself, and the fees that the first firm received would be irrelevant.

If a single firm performed both functions, the case would become somewhat more complicated. The concern would be that the firm

might be biased in performing the patent-examining function because it wished to generate business for its search division. The firm might also have incentives to charge large amounts for the search and relatively small amounts for patent decisions in order to minimize its fee liability. There would thus be an argument in this case for requiring that all fees be paid only if the patent were granted and that the sum of the search and decision fees be used to determine fines. Perhaps this solution would be too extreme, but the Board should not take at face value separate menu prices of search and decision tasks when these tasks were performed together. Rather, the Board should resolve all doubts by allocating fees to the decision function rather than to the search function. The Board would need to allocate enough fees to the decision function so that the search function was at best a break-even operation rather than a profit center.

We have so far left out another firm that would be involved in the process: the firm drafting the patent for the patent applicant and conducting the private equivalent of the patent-prosecution process. There is no inherent reason why these functions could not also be combined with the patent-search and patent-examining functions. This possibility, however, would increase the danger that firms might strategically manipulate their claimed fees, arguing that most of the fees were attributable to drawing up the patent and only a small percentage of the fees attributable to the ultimate decision on whether to grant the application. Once again, it would be critical for the Board to allocate enough of the fees to the decision function so that firms would not have incentives to try to increase their patent-prosecution business by granting patents. We worry, however, that this allocation would be inherently difficult, because the time spent learning about the invention would help both with the writing up of the patent and with the decision to grant. Thus, if one firm drew up and granted the patent, it probably would make sense for all these fees to count as the base for assessing fines.

If this approach were used, the resulting market structure might not be one in which all functions would be combined but rather one in which one firm would write up the application and conduct a search and another firm would make the decision whether to grant the patent. This possibility, however, would present a subtle danger that the patent-examining firm would not sufficiently scrutinize the patent application but rather reach implicit deals with patent firms to approve the patents that they submitted in exchange for relatively small fees. Our approach considerably limits the attractiveness of this

strategy, because if most of the patents forwarded to the patent-examining firm were bad patents, then the patent-examining firm would lose money. The patent-examining firm might implicitly agree, however, that if the patent-drafting firm granted it a large number of valid patents, it would also be willing to approve a smaller number of invalid but potentially much more valuable patents.

If our approach were to rely entirely on this penalty mechanism, this form of manipulation might concern us greatly. The fact that the PTO would continue to provide a decertification function and to consider the results of actual litigation in doing so, however, provides some degree of reassurance. Relatively high-value patents are especially likely to be litigated, and the PTO could take a close look at litigated cases in which a court found the patent invalid to try to determine whether the patent-examining firm relaxed its standards in order to continue receiving other, lower-value patents. The PTO could be especially suspicious if the fees charged for examination of a high-value patent were not much greater than those charged for a much lower-value patent. Nonetheless, we recognize that there may be concerns that this system would still be inadequate. As a result, we suggest a final addition to a demonopolization regime: private attorneys general.

c. Private Enforcement

Commentators have suggested that it might be useful to incentivize private parties to invalidate patents by awarding them bounties. For example, John Thomas has suggested that the PTO award bounties to private individuals who come forward with prior art sufficient to invalidate patents.¹⁵² Joseph Miller has argued for a bounty to be awarded to a litigant in any case resulting in the invalidation of a patent.¹⁵³ We do not engage these proposals here, but they inspire our own incentive scheme, which is designed to target not the incentives of the patentee directly but instead those of the patent-examining firm. Conceivably, their proposals might be used as adjuncts to our own system. If, however, it is possible to build a more reliable system to determine the validity of patents, such additional safeguards might not be necessary.

¹⁵² See John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305, 341-42 (advocating that the PTO provide “a system of cash prizes” to encourage third parties to disclose “patent-defeating prior art”).

¹⁵³ See Miller, *supra* note 135, at 704-05 (arguing for a litigation-stage cash bounty “equal to the net profits the patentee has earned up to the date of judgment”).

A private enforcement mechanism might work as follows: The government would auction off to third parties the right to challenge the granting of any patent by a patent grantor.¹⁵⁴ The selected third party, which must have no affiliation with the patentee, a competitor, or the patent-examining firm, would then have a right to bring a challenge before the PTO (perhaps, more specifically, before the Board of Patent Appeals and Interferences). If the third party decided not to bring an action, successive auctions would be held until either some third party brought an action or no one bid at the auction. After a hearing, the PTO would determine whether the patent should have been granted. This decision would be the final determination of whether the patentee would receive the patent.

A variety of different approaches might be used to specify who must pay what to whom after the PTO decision. We recommend the following, admittedly unconventional, approach. If the challenge was unsuccessful because the PTO found that the patent was appropriately issued, the challenger would pay the reasonable legal expenses of the patent-examining firm. If the challenge was successful because the PTO determined under a *de novo* standard that it would not have issued the patent, the patent-examining firm would pay the reasonable legal expenses of its challenger, plus the combined reasonable legal expenses of both parties. There would be no magic number for damages, but this approach would reasonably calibrate the challenger's incentives to sue. The challenger would sue if it believed that it had greater than a fifty-percent chance of winning. At that threshold, if it lost, it would pay the expenses of both sides, but if it won, its net profit would be the expenses of both sides.

Settlements would be limited. The private attorney general could agree to withdraw the challenge, but if it were to do so, it would still need to pay whatever legal expenses had been incurred up to that point by the patent-examining firm. Similarly, the patent-examining firm and patent applicant could agree to narrow the patent or make other changes (for example, by removing an overly broad claim in an otherwise appropriate patent). Nonetheless, the private attorney general would still need to pay the damages specified above based on legal expenses incurred up to that point. Note that, with this scheme, if there were a relatively minor error or other problem in a patent, the patent-examining firm and patentee could quickly agree to fix the error, and damages would be relatively low, but there would still be an

¹⁵⁴ Auction revenues might be distributed to third parties that are sued but vindicated.

incentive for the private attorney general to bring an action. If a settlement occurred where a patent was not withdrawn in its entirety, another auction would be held, and any other third party would still be able to challenge the patent. This would reduce the possibility of collusion or side payments between the private attorney general and the patent-examining firm.

Over time, the PTO might alter this formula somewhat. For example, if the PTO believed that private patent grantors were still manipulating the system, it could provide that the challenger would receive, after reimbursement of expenses, some multiple (perhaps 1.5 or 2) of the combined parties' legal expenses. An argument for a relatively high multiplier would be that challengers must be compensated not only for their litigation expenses but also for their expenses reviewing a large number of patents to try to determine whether any were granted erroneously. If, on the other hand, the PTO believed that there were too many challenges, it might provide for a multiplier below one. This scenario seems much less likely to us because, if the challengers were rational, they should win at least approximately half of the challenges that they would make.

The goal of this scheme would be to break implicit contracts to approve dubious high-value patents in exchange for additional business between patent applicants and patent-examining firms. It might not seem that the deal would necessarily be bad from the perspective of the patent-examining firm; perhaps the patent applicant could provide so much business that it would still be worth it to pay the occasional damages to a challenger. But the PTO could decertify a firm that lost challenges if the challenges led the PTO to believe that the firm was not acting in good faith. In addition, the patentee would stand to gain relatively little from this implicit contract if its dubious patents were likely to be challenged. Moreover, if a patent-examining firm were to develop a reputation for such behavior, patent applicants would realize that third parties would be especially likely to scrutinize that firm's patents and would avoid the firm.

In sum, the private-attorneys-general mechanism would remove any slack left by the random-evaluation mechanism. With the random-evaluation mechanism alone, a patent-examining firm could still be relatively generous in granting important claims or important patents in order to receive additional business from the same patentees. For example, it might grant such applications as narrow but valid patents for which it would charge excessively high fees. There would be little reason to do this, however, because the private attorneys general

would cherry-pick the patents most likely to be invalid. Meanwhile, the additional expense of defending issued patents must ultimately be passed on from the patent-examining firm to the patentee. Hence, even if a patent applicant could make side payments to the patent-examining firm (for example, in the form of additional business), it would be expensive to do so, and the strategy would be successful only if third-party private attorneys general failed to notice what was happening. If it turned out that private attorneys general did not have adequate incentives to identify excessively broad patents, the PTO, as noted above, could increase the damages that the private attorneys general would receive.

3. More Speculative Approaches

Complete privatization of the patent-examining process is not likely to happen in the near future, and in that sense ours is a speculative proposal. Nonetheless, we have so far suggested variations on relatively standard legal tools—certification programs, tort liability, fines, and private attorneys general—as means of implementing demonopolization. Perhaps the most adventurous aspect of our proposal has been the suggestion that the PTO randomly review a subset of granted patents. Given that the PTO already has internal quality-review programs and statutory power to initiate reexamination on its own motion, this proposal is just a modest jump. Perhaps steps short of full privatization could occur over time, and some or all of our suggested steps could be put into place. Our purpose has not been to advocate a specific plan, and we might reasonably see some elements that we have suggested, along with others that we did not recognize, serving as an effective demonopolization solution.

In this subsection, we consider admittedly more speculative approaches to demonopolization. The possibility that these might actually be employed is limited to an even more distant future than that in which the previous demonopolization methods would occur. Nonetheless, we present them as theoretically intriguing alternative approaches to demonopolization. The first would be to give patent applicants the option of skipping the private patent-examining firms altogether, instead certifying the patents themselves. This would only be possible, we acknowledge, if the patent generator faced substantial penalties if it certified itself inappropriately. The second possibility would be to use an entirely decentralized system of patent certifica-

tion. The idea, building on the existing peer-to-patent process,¹⁵⁵ would be to use prediction markets to forecast the probability that particular patents might be found valid.

a. *Patentee Self-Certification*

A self-certifying patentee would be required to choose a value of p , the probability that her patent would be randomly selected for an assessment by the PTO (perhaps more specifically, by the Board of Patent Appeals and Interferences). This selection might be subject to some minimum and maximum (perhaps 0.01 and 0.20). If the Board determined that the patent was invalid, the patentee would be required to pay a fine equal to what the value of the patent would have been, divided by p . If there were no other options for obtaining a patent, a prospective patent applicant would choose to self-certify a patent if and only if there were more than a fifty-percent chance that the Board would find the patent to be valid. This approach bears some resemblance to a proposal by David Rosenberg and Robert Jackson.¹⁵⁶ They suggested that the government randomly choose one of a particular employer's sites to check for regulatory violations and, if it found such violations, to multiply the penalties by the inverse of the probability of selection.¹⁵⁷

This approach would avoid many of the dangers of the earlier approaches because the patentee would effectively be forced to internalize the full costs of mistaken patent awards. Thus, we no longer would need to worry about the side payments that were of concern when

¹⁵⁵ See Peer-to-Patent, <http://www.peertopatent.org> (last visited Apr. 15, 2009) (providing a system for peer review in cooperation with the PTO). The PTO began a patent-peer-review pilot program on June 15, 2007. See Pilot Concerning Public Submission of Peer Reviewed Prior Art, 1319 Off. Gaz. Pat. & Trademark Off. 146 (June 26, 2007), available at <http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/peerreviewpilot.pdf> (announcing the intent to "determine the extent to which the organized submission of documents together with commentary by the public will provide useful prior art for examiners"). Because of its initial success, the program was extended through June 15, 2009. See Extension and Expansion of Pilot Concerning Public Submission of Peer Reviewed Prior Art, *supra* note 114 (announcing that the program was being revised, extended in duration, and expanded to include a broader array of eligible applications).

¹⁵⁶ See Robert J. Jackson, Jr. & David Rosenberg, Essay, *A New Model of Administrative Enforcement*, 93 VA. L. REV. 1983, 1984-85 (2007) (proposing "single-outcome sampling"—i.e., determining the total liability of multiple sources based on a random sampling of one source—as an efficient method of deterrence).

¹⁵⁷ See *id.* ("[I]n requiring [an] agency to determine liability at only one source, our proposal achieves this deterrence result at a fraction of the cost of iterative monitoring.").

finances were based on a multiple of the fees paid to a private patent grantor rather than on the value of the patent itself. Of course, this presents a potentially serious problem: how would the PTO determine the value of a patent? We doubt that the PTO would be able to make this calculation with any accuracy. As a result, the approach would likely be feasible only if there were a reliable market-oriented approach to determine the potential value of a patent.

There is, however, a relatively simple market-oriented mechanism that could be used, borrowed from a self-assessment mechanism described by Saul Levmore.¹⁵⁸ Levmore tackled the problem of valuing houses for real-estate tax-assessment purposes by suggesting that each homeowner be allowed to self-assess the value of her house or other real estate. The self-assessed valuation would determine the tax that must be paid, the catch being that anyone else could then purchase the real estate for that price.¹⁵⁹ It might be that everyone would tend to value their own property at a relatively high price, but because this would be true of everyone, it would not distort the relative amount of tax that owners of real estate would have to pay. Even if Levmore's proposal is unappealing because those who underestimate the value of their homes could be forced to give them up, this might be much less of a concern in the patent context, where sophisticated parties, generally corporations, attempt to make careful assessments.

The approach, then, would be to allow the private party to self-assess the value of its patent, under the proviso that after the patent was finally granted (either because the case was not selected for review by the PTO or because the PTO reviewed the case) any other party would be able to purchase the patent for the self-assessed amount. Suppose, for example, that party *X* had a patent expected to be worth \$1 million if found valid by the PTO. *X* might pick a value of $0.10p$ and self-assess the patent at \$1 million. It would then have to put up a bond of \$10 million; it might do so by securitizing the revenues from a product associated with the patent. There would then be a one-in-ten chance that the case would be selected for review by the PTO; if it were so selected and found invalid, the patentee would be required to pay \$10 million. If it were not selected, or if it were selected but

¹⁵⁸ See Saul Levmore, *Self-Assessed Valuation Systems for Tort and Other Law*, 68 VA. L. REV. 771, 778-90 (1982) (detailing the advantages and disadvantages of self-assessment mechanisms and arguing for their superiority over institutional mechanisms in many contexts).

¹⁵⁹ See *id.* at 779 (proposing that the market penalty for those who undervalue their property ought to be having their property sold at the self-assessed price).

found valid, anyone else would have the opportunity over some brief period of time to take the patent for \$1 million.

This system would not be as advantageous to patent applicants as the existing system or, in many cases, as the private alternatives sketched above, because the patent applicant might not receive the patent *and* might need to pay a large amount of damages. In the above example, if there were a fifty-percent likelihood that the patent would be found valid, the expected value of the patent would be \$0 because the expected damages would be equal to the patent value; with a traditional approach, the expected value would be \$500,000.

A corrective would be to provide that damages paid as a result of the scheme be paid to the patentees whose patents were found valid (or not randomly selected), in proportion to their self-assessed valuations. Suppose, for example, that twenty different patentees had patents with a fifty-percent likelihood of being found invalid and a fifty-percent likelihood of being found valid and worth \$1 million. With $p = 0.10$, the expected damages amount would be \$10 million. Each firm would thus expect to receive, on average, \$500,000; as a result, the expected value of attempting to receive a patent would again be equal to \$500,000.

Perhaps the most obvious objection to this scheme is that the size of bonds needed to obtain patents would be prohibitively high. It might be that capital markets could come to the rescue, providing funding to those with strong patents and effectively serving in the gatekeeper role that we reserved for private patent grantors above. The risk of being randomly selected for examination should be relatively easy to diversify by providing financing to numerous potential patentees. The maximum size of the bond would depend on p , so patent holders would have an incentive to choose a value of p neither too high (thereby saving litigation costs) nor too low (lest capital-market financing be too expensive). Of course, even with $p = 1$, the system would add more risk to patent applicants than exists in the current system. Although the expected value of applying for a patent would be the same with the above corrective, there would be risk associated with such redistributions among patent applicants, as well as risk associated with the self-assessment mechanism.

While self-certified patents might be more outlandish than the proposals above, as the above analysis suggests, it would be relatively easy to generate a set of incentives that would lead private parties to self-certify only if they were confident that there was more than a fifty-percent chance that their patents would be upheld by the PTO. Such

a system might thus be an attractive option for prospective patent applicants. If many applied for this option, it might be a signal to the PTO that it was being too tough in certification and other decisions and ultimately discouraging confident applicants from applying through existing channels. Even if the cost associated with self-certification were simply too great, making it available as an option could do little harm.

b. *Market-Based Peer-to-Patent*

A different approach to demonopolization would be to use a prediction market to forecast the probability that a patent would be found valid if it were selected for random examination by the Board (or, alternatively, if it were selected for litigation). A full discussion of prediction markets is beyond the scope of this Article,¹⁶⁰ but private parties would essentially be trading contracts worth a fixed amount (say, one dollar per contract for each of 10,000 contracts) if and only if the patent were ultimately found valid.

The prediction market would be a conditional market, assessing validity *if* selected for examination; this would be technically implemented by reimbursing payments if the patent were not so selected.¹⁶¹ Meanwhile, the prediction market would be subsidized (by the patent applicant) and use an automated market maker;¹⁶² these conditions would ensure that there was sufficient market liquidity to generate interest among the public. Finally, a significant objection to prediction markets is that they might be subject to manipulation (in this example, presumably, by applicants for patents who would seek to buy up contracts).¹⁶³ Some researchers argue that other traders would have sufficient incentive to identify and trade against manipulation. Pending resolution of this debate, a simple approach would be to restrict

¹⁶⁰ For a complete discussion, see generally MICHAEL ABRAMOWICZ, PREDICTORACY: MARKET MECHANISMS FOR PUBLIC AND PRIVATE DECISION MAKING (2007).

¹⁶¹ See *id.* at 141-44 (discussing conditional markets). Making full refunds might decrease the incentives of parties to participate in prediction markets, but this problem could be offset by using multiple-stage prediction markets. See *id.* at 234-35. In the first stage, participants would forecast the value of the prediction-market contract immediately before the decision whether to select the patent for examination.

¹⁶² See *id.* at 43 (describing an “automated market maker” as a mechanism that “uses a computer algorithm to offer tradable contracts to buy and sell and provide liquidity to the market”).

¹⁶³ See *id.* at 28-32 (identifying the danger of market manipulation through the use of trades).

trading to authorized private parties akin to the patent-examining firms that we imagined above would be certified by the PTO.

Implementation of such a system would require further experimentation into prediction markets and particularly conditional markets, which have not been widely implemented in the private sector. We see a potential precursor to this approach, however, in the Peer-to-Patent website.¹⁶⁴ Just as the peer-to-patent system relies on private parties to provide information about the validity of patents, so, too, would a prediction market. The advantage of the prediction market, however, is that it would provide greater incentives for private participation. Someone who found relevant prior art could profit by betting that the price of the corresponding tradable contract would fall and subsequently releasing the information to the public.¹⁶⁵ At the same time, someone able to analyze data submitted by others could effectively profit by conducting careful analyses.

B. *The Continued Role of the PTO*

As noted above,¹⁶⁶ whatever the particular contours of a system by which patents could be privately provided, we would expect the PTO or some other regulatory agency to continue to have a role as the architect of the demonopolized system. This would include a role in certification, in reviewing a random set of privately granted patents, and in gradually experimenting with and reforming the outsourcing of search and decision functions. This Section considers possible additional roles for the PTO. For example, the PTO might continue to provide patents, though we argue that it should be treated on par with private parties. We also consider whether it would be necessary to maintain the PTO to publish patents and to conduct interferences and reexaminations of issued patents.

1. Patent Provision

There would be no reason to close the doors of the patent-examining component of the PTO if the Office could survive against

¹⁶⁴ See Peer-to-Patent, *supra* note 155 (allowing public commentary on pending patent applications).

¹⁶⁵ For a discussion of how a prediction market can be used as a substitute for a bounty system, see Michael Abramowicz, *Market-Based Administrative Enforcement*, 15 YALE J. ON REG. 197, 208-10 (1998).

¹⁶⁶ See generally *supra* Section III.A (describing the proposed model for demonopolizing the PTO's patent grant authority).

private competition. Many patent applicants might prefer the comfort of the familiar, and the existing institutional procedures and knowledge of the PTO might give it a head start against private competition. Nonetheless, once a transition to a demonopolized version of the PTO were complete, the PTO should not be given any inherent advantage over competing providers. That is, ideally the PTO would be subject to the same penalty mechanisms as other firms, and ideally the patent regulator would be sufficiently independent of the PTO so as to ensure that the PTO itself did not engage in any manipulative tactics to get business. There would be some risk that the PTO would not be able to survive as a provider of patents on its own, perhaps because it would lose business or because it would face substantial fines if it granted patents too generously. If so, then as long as the gradually developed system of private competition proved effective, there would be no reason for a government-sponsored PTO to continue.

At that point, it might be feasible to privatize the PTO, so that it might compete against other private providers. It would be important, however, that the demonopolization of the PTO occur before privatization. As R. Richard Geddes explains, “privatized firms will become more politically effective in thwarting repeal of their monopoly” such that “[i]t will often be better to eliminate the monopoly before or simultaneously with privatizing, rather than trying to do it later.”¹⁶⁷ Premature privatization of the PTO, especially without some of the protections that we have urged, would risk sanctioning an institution that did a poor job of granting patents but a good job of protecting its own monopoly. Perhaps such an entity would be more flexible than the existing PTO, but there would be no guarantee that it would use that flexibility for public benefit.

2. Filing, Publication, and Continuations

Whatever the role of the PTO might be as grantor of patents, it would continue to have a role in publishing patent applications, in order to promote the patent system’s goal of encouraging disclosure. A straightforward requirement might be that when patents were submitted to private patent grantors, the patent grantors would be required to immediately submit the patents to the PTO. The date on which this occurred would count as the filing date for all legal purposes, including for whether the patent was properly filed within one

¹⁶⁷ Geddes, *supra* note 121, at 229.

year of disclosure of the invention¹⁶⁸ and for determination of the patent's expiration.¹⁶⁹ Disclosure could then occur eighteen months after filing, if the patent application were not granted or withdrawn in the interim.¹⁷⁰ Additionally, an issued patent would be published immediately upon issuance.

It might, however, make sense for publication to occur sooner. A requirement that patent applications be published within a much shorter period of time, perhaps three months, should be workable. Long waits at the PTO occur not because patent examination is inherently time consuming¹⁷¹ but because of queuing. Of course, queues are a function of the PTO's governmental status. Law firms and other service providers do not generally make clients wait long periods of time; they adjust their prices and their work intake to allow prompt service. A significant benefit of demonopolization should be more prompt patent publication, particularly for those patent applicants that take advantage of private providers. An argument against prompt publication requirements would be that the patent applicant should be able to know whether it will be granted a patent before it is obliged to publish data that it otherwise might choose to keep as a trade secret.¹⁷² Whatever the merits of this argument, it is much weaker if the patent applicant could choose the patent grantor and could seek a firm that promised prompt analysis of its application.

Whatever the publication schedule, a significant question in a demonopolized system is whether the patent applicant can file more than once. One way that an applicant might seek to do so is by filing the private equivalent of a continuing application.¹⁷³ While the PTO

¹⁶⁸ Patents may not be granted if the subject of the patent application was disclosed more than one year prior to its filing. 35 U.S.C. § 102(b) (2006).

¹⁶⁹ See *id.* § 154(a)(2) (establishing a twenty-year patent-protection term running from the date that the patent application was initially filed).

¹⁷⁰ See *id.* § 122(b) (setting forth the eighteen-month publication requirement and the specific exceptions to the rule).

¹⁷¹ Patent Examiners have, on average, about twenty hours to complete their review of one patent application. See Megan Barnett, *Patents Pending: With Technology Booming, Errors and Ever Longer Waits Bedevil the American Patenting Process*, U.S. NEWS & WORLD REP., June 10, 2002, at 33, 33-34 (discussing the backlog problems in the current patent system).

¹⁷² See Joseph M. Barich, *Pre-Issuance Publication of Pending Patent Applications: Not So Secret Any More*, 2001 J.L. TECH. & POL'Y 415, 416-17 (setting forth the arguments supporting secrecy).

¹⁷³ See 35 U.S.C. § 120 (detailing the parameters for filing a continuing application).

has recently attempted to limit patent continuations,¹⁷⁴ some concerns about patent continuations might be partly assuaged in a demonopolized system. For example, the leading academic critics of traditional continuation practice, Mark Lemley and Kimberly Moore, argue that “the structure of the PTO suggests that continuations may well succeed in ‘wearing down’ the examiner, so that the applicant obtains a broad patent not because he deserves one, but because the examiner has neither incentive nor will to hold out any longer.”¹⁷⁵ This danger, however, is likely to be much smaller with private patent providers, who could voluntarily offer contracts limiting continuations or charge increased fees for such applications. In any event, private patent providers would be subject to the consequences of granting weak patents.

A second possibility would be that a patent applicant might seek a second opinion after being denied a patent from the first patent-examining firm to which it applied. At first blush, it appears that permitting such a patent applicant to go to another patent grantor would distort the system, allowing applicants with weak patents an opportunity to find some patent-examining firm that believed in the patent’s strength. It might make sense to allow patent applicants to consult multiple firms, however, especially given our suggestion that payments to the patent-examining firm be permitted only if the patent were granted.¹⁷⁶ The prospective patentee’s challenge would be to find some patent-examining firm that believed that the patent was sufficiently strong. These firms would have incentives to be suspicious of patents already rejected by other firms, much as auction winners have

¹⁷⁴ See Changes to Practice for Continued Examination Filings, Patent Applications Containing Patentably Indistinct Claims, and Examination of Claims in Patent Applications, 72 Fed. Reg. 46,716, 46,716 (Aug. 21, 2007) (to be codified at 37 C.F.R. pt. 1) (noting the requirement of a greater showing before second and third continuations are granted to patent applicants). In *Tafas v. Dudas*, 511 F. Supp. 2d 652 (E.D. Va. 2007), *vacated in part*, 541 F. Supp. 2d 805 (E.D. Va. 2008), *vacated in part sub nom.* *Tafas v. Doll*, 559 F.3d 1345 (Fed. Cir. 2009), the plaintiffs were granted preliminary injunctive relief from the PTO’s implementation of the Final Rules. *Id.* at 657-59. Subsequent court proceedings granted summary judgment for the plaintiffs on the ground that the proposed limits on continuation applications exceeded the PTO’s authority. *Tafas v. Dudas*, 541 F. Supp. 2d at 817. The Federal Circuit affirmed the lower court’s finding that the limits on continuation applications were invalid, though it vacated the judgment and remanded on other grounds. *Tafas v. Doll*, 559 F.3d at 1361-62.

¹⁷⁵ Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63, 65 (2004).

¹⁷⁶ See *supra* subsection III.A.2.a (discussing the implications of having payments due only when a patent is granted).

incentives to compensate for the winner's curse.¹⁷⁷ On the other hand, the benefits of allowing a patent applicant to consult multiple firms might be low. We take no strong position on this issue but would require that a patent applicant disclose to a patent-examining firm any contacts with other patent-examining firms regarding the same or a related patent application.

3. Patent Timing and Interferences

Demonopolization might also be a useful opportunity for changing the statute governing patent timing. At a minimum, patent applicants ought not to be compensated for time attributable to long evaluation periods at the PTO¹⁷⁸ if they were able to choose another provider. Demonopolization might also, however, be a useful opportunity to change the rules governing priority. The United States currently employs a first-to-invent system, while other countries base priority on a first-to-file system.¹⁷⁹ Leading U.S. patent-reform bills have contemplated harmonizing the U.S. system with the rest of the world by switching to a first-to-file system. This would make particular sense in conjunction with demonopolization, because there might otherwise be inconsistency in private determinations of who was the first to invent. Switching to a first-to-file system would reduce the possibility of such inconsistencies.

Adoption of a first-to-file system would thus eliminate the need for the PTO to conduct "interferences" to determine inventive priority when multiple parties filed simultaneously. In a first-to-file system, it would be the patent applicant's responsibility to choose a patent prosecutor who would draw up the patent relatively quickly, and the patent applicant would have a similar incentive to choose a firm that would examine the patent application quickly. In other words, the choice of a patent grantor would be in the hands of the patent applicant. There would be tradeoffs, however. Indeed, there is a strong argument that demonopolization would justify a switch not to first-to-file but to first-to-issue. Just as a first-to-file system might lead patent

¹⁷⁷ See Michael Abramowicz, *The Law-and-Markets Movement*, 49 AM. U. L. REV. 327, 398 (1999) ("[O]ne should expect the smart bidder to shave a bid enough so that on average there is no winner's curse.").

¹⁷⁸ See 35 U.S.C. § 154(b) (detailing circumstances under which the patent term may be adjusted).

¹⁷⁹ See Kimberly A. Moore, *Worthless Patents*, 20 BERKELEY TECH. L.J. 1521, 1551 (2005).

applicants to rush their applications,¹⁸⁰ so too might a first-to-issue system lead patent grantors to rush review. The PTO might counter this by specifying a minimum period for review to take place.

If demonopolization were not accompanied by a switch to first-to-file, then the PTO would need to continue monitoring incoming patent applications to determine when an interference proceeding might be needed.¹⁸¹ An alternative possibility would be for interferences to occur after a patent issued, as they sometimes already do.¹⁸² A third possibility would be that, after the possibility of a dispute were recognized (e.g., after issuance of two or more patents), each recipient of a private patent would solicit a determination of an invention date by the private patent grantor. Of course, such a system would need some combination or variation of the techniques described above to ensure that the private patent grantors would have incentives to fix the invention date accurately.

4. Reexamination

A final question is whether the PTO would need to be available to conduct reexaminations. Though the PTO itself has authority to initiate the process *sua sponte*, a reexamination typically occurs when a third party, often a potential patent infringer, identifies prior art and asserts that the patent should therefore not have been granted.¹⁸³ The PTO determines whether there is a substantial question of patentability and, if there is, whether the patent is valid. If it is not valid, the PTO can reject the patent or, as would occur in an initial examination, force the patent applicant to narrow the scope of its claims. A

¹⁸⁰ See Brad Pedersen & Vadim Braginsky, *The Rush to a First-To-File Patent System in the United States: Is a Globally Standardized Patent Reward System Really Beneficial to Patent Quality and Administrative Efficiency?*, 7 MINN. J. L. SCI. & TECH. 757, 761 (2006) ("Under the first-to-file rules . . . inventors will simply rush to prepare and file a patent application as soon as practicable after conceiving of an invention . . ."); see also Charles L. Gholz, *First-To-File or First-To-Invent?*, 82 J. PAT. & TRADEMARK OFF. SOC'Y 891, 892 (2000) (arguing that a move to a first-to-file system is good for the United States domestically as well as for international harmonization).

¹⁸¹ See 35 U.S.C. § 135 (detailing the interference process).

¹⁸² See *id.* § 135(a) ("Whenever an application is made for a patent which, in the opinion of the Director, would interfere with any . . . unexpired patent, an interference may be declared . . .").

¹⁸³ See *id.* §§ 301–302 (establishing the process by which any person may request *ex parte* reexamination following the citation of prior art); see also *id.* § 303(a) (power of the PTO Director to initiate *ex parte* reexamination); *id.* §§ 311–313 (initiation of *inter partes* reexamination).

problem with the reexamination process is that it can be relatively time consuming.¹⁸⁴ Indeed, patent litigation may proceed during the reexamination process. In the BlackBerry litigation, for example, the patent litigation proceeded despite the fact that the PTO appeared poised to cancel the patents that it had issued, and ultimately a large settlement was reached.¹⁸⁵

We believe that some version of a reexamination process could serve a useful function even in a demonopolized patent-examining system. Even if a patent-examining firm conducted a search in good faith, and even if there were strong incentives for it to do so,¹⁸⁶ it might miss some relevant piece of prior art, either as a result of an error in its search or simply because the prior art was too difficult to locate.¹⁸⁷ It would be possible for such prior art to be brought to the attention of a court in litigation, but the goal of the patent system is to enable private parties to forecast with some confidence *before* expensive litigation whether patents would be held valid. An effective reexamination system, for example, might help prevent those with weak patents from extracting nuisance-licensing fees. In addition, patent-examining firms might have greater competence in determining patent validity than district courts.¹⁸⁸

It would, however, be straightforward to imagine a privatized form of a reexamination process. One approach would be to adjust the incentive structure so that a private firm would have an incentive to

¹⁸⁴ See Posting of Dennis Crouch to Patently-O, PTO Director Jon Dudas Commits to Patent Reform Measures—Saving Applicants \$30M+ Annually, http://patentlaw.typepad.com/patent/2005/03/pto_director_jo.html (Mar. 5, 2005) (“Almost half of reexams take over two years and many over four years to complete.”).

¹⁸⁵ See generally Yuki Noguchi, *BlackBerry Patent Dispute Is Settled*, WASH. POST, Mar. 4, 2006, at A1.

¹⁸⁶ See, e.g., *supra* Section III.A (discussing private-party incentives to provide quality patent-examining services).

¹⁸⁷ One might argue that prior art not located after a thorough search ought not to count against a patent applicant because if the prior invention could not be found through search of the usual databases, the past disclosure was not of much use to later inventors. Such a rule would be only a slight expansion of the so-called “lost art” doctrine. See MERGES & DUFFY, *supra* note 125, at 398 (discussing the “lost art” doctrine announced in *Gayler v. Wilder*, 51 U.S. (10 How.) 477, 495 (1850), which held that “completely lost” prior art should be treated “as if it had never been discovered” because “[t]he public could derive no benefit from it until it was discovered by another inventor”). Nonetheless, we assume here that the current law correctly identifies what should count as prior art.

¹⁸⁸ See Kimberly A. Moore, *Are District Court Judges Equipped To Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1, 2 (2001) (“[D]istrict court judges improperly construe patent claim terms in 33% of the cases appealed to the Federal Circuit.”).

withdraw bad patents before issued patents were randomly selected for review or challenged by private parties.¹⁸⁹ For example, damages might be reduced according to a formula. It would be important that damages for the initial bad issuance not be eliminated altogether; otherwise, the patent-examining firm's incentive would be to issue a patent and hope that nobody would challenge the grant. This approach would constrain reexamination to a relatively short period, but third parties would have an opportunity to provide prior art without going through the trouble of mounting a formal challenge as described above. Of course, the existence of that challenge procedure might itself be a sufficient alternative to reexamination.

It might also be possible to create a reexamination procedure that could be used after the lapse of a deadline for a private challenge and after the random selection of cases for review, whether or not a patent was selected for such review. We are not sure that such a procedure would be necessary, since new prior art can always be introduced at litigation.¹⁹⁰ One possibility would be that when a third party would go to submit prior art (perhaps paying some fee, akin to the current fee for a reexamination¹⁹¹), the original patent grantor would have to reexamine the patent and decide whether to confirm or cancel it. If it confirmed it, there would again be a chance of random review by the PTO; if it canceled it, it would be obliged to return the patent applicant's fee. It would also be possible to devise a system in which third parties could challenge a patent with some other private patent grantor, but it would then be necessary to devise a separate incentive system for these firms.

As a result, we do not believe that the PTO would need to continue to make reexamination available, other than for patents that it issues itself. We do, however, believe that the PTO might have a role in voiding patents issued by a particular private patent-examining firm

¹⁸⁹ See *supra* subsections III.A.2.b–c (discussing randomized board review and private-enforcement approaches).

¹⁹⁰ We would recommend that Congress or the Federal Circuit reconsider the rule that the presumption of patent validity apply even to prior art not considered by the original patent grantors, at least if the new prior art is not substantially duplicative of other prior art that was considered. See *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1745 (2007) (noting that “the rationale underlying the presumption—that the PTO, in its expertise, has approved the claim—seems much diminished” where the agency has not passed on the relevant prior art).

¹⁹¹ Under current law, both *ex parte* and *inter partes* reexamination procedures require the submission of a fee in conjunction with the request for reexamination. See 35 U.S.C. § 302 (2006) (*ex parte* reexamination); *id.* § 311(b) (*inter partes* reexamination).

should it determine that it were appropriate to decertify the firm. Voiding patents might not be appropriate in all cases, but it might make sense if there were some indication of malfeasance (for example, if the patent-examining firm were taking side payments from some patent applicants). If the PTO did decertify a firm, it might decide after hearings to void some or all of the patents issued by that firm. In that case, the firm would be required to return the fees paid to the patent applicants, and the applicants could seek to have their patents reissued by some other patent grantor.

CONCLUSION

The current administrative structure of the PTO, with its absolute monopoly on the examination of all applications for U.S. patents, dates back to 1836. At that time, it was on the cutting edge of innovative government apparatuses. The agency's monopoly allowed the centralization of information and expertise that was quite possibly an important and worthwhile advance in governance for an era with primitive communications and less international patenting of innovations. Yet that centralized and monopolistic system is now wildly outdated, and, worse still, it has an increasingly impossible task.

In the twenty-first century, all of the world's innovators come to the United States in search of patents. A single country's government agency—even a relatively large and rich country's, such as the United States's—cannot hope to undertake the task of thoroughly examining all of humankind's tremendous creative output. Nor should any country even want to undertake that task, for to do so would be to waste the time and energy of highly skilled, technically trained workers who would merely be repeating examinations of the same invention in each country. Smaller countries like Israel and the many nation-states of Europe have already realized this basic point, and the burgeoning backlog in the PTO is rapidly pushing our country to enter agreements that shunt some of its work to patent offices in other nations, to the applicants themselves, and to domestic third parties. As that trend continues, the government will have to develop more sophisticated mechanisms to determine whether other actors are producing quality work. As we have shown, such mechanisms are available, and they should be developed and deployed as demonopolization continues.

So fast are the forces of demonopolization working that they have already stirred reactionary impulses. As this Article was going to print,

the Senate Judiciary Committee approved a patent bill containing the following language:

(b) Search and Examination Functions.—To the extent consistent with United States obligations under international agreements, examination and search duties for the grant of a United States patent are sovereign functions which shall be performed within the United States by United States citizens who are employees of the United States Government.¹⁹²

If enacted into law (though enactment of this language is very much uncertain), the provision would seem to codify the patenting monopoly and force all U.S. patent applications exclusively through the hands of “employees of the United States Government.” The emergence of such a provision in the halls of Congress is, first and foremost, powerful evidence that demonopolization of the patenting system is in play. Such language was never codified, and did not have to be codified, in past times, when the patenting monopoly was unquestioned.

If such a provision were to be codified, it would at first blush seem to end the emerging processes of international work-sharing that have been the first step in the current demonopolization. That result would be awful public policy, for it would doom the PTO both to terrible and growing backlogs of unexamined applications and to continuing staffing difficulties: the PTO would need to try to hire ever more technically competent individuals, thus taking them away from other areas of the U.S. economy. Yet close examination of the proposed language in the patent bill reveals an important escape clause: obligations under “international agreements” trump the prohibition, and those agreements appear to encompass Executive Branch agreements (not only treaties) as well as future agreements. Thus, the proposed bill does not seem to constrain the international work-sharing process currently occurring only through international agreement.

But what of domestic demonopolization efforts? Two points are worth noting here: First, the proposed bill would cast legal doubt on two of the agency’s existing programs that currently seem most likely to lead toward demonopolization—the Accelerated Examination Procedure and the Peer-to-Patent pilot. The goal of each program is to get individuals outside the PTO to search and evaluate applications—actions that the bill would consider “sovereign functions” of the U.S. government and thus only to be performed by government employees. Yet each of those programs may survive because, for each appli-

¹⁹² S. 515, 111th Cong. § 2(k) (2009).

cation, some form of search and examination must occur within the PTO. The private searches are optional and thus might not be considered “examination and search *duties*” within the meaning of the bill.

A second and final point, however, is that the proposed legislation, if it were to be enacted, seems destined to be politically unsustainable precisely because the language creates a discriminatory regime favoring *international* over *domestic* demonopolization. Once international agreements are in place with entrepreneurial foreign patent offices (as is already the case with the patent offices in Denmark, the United Kingdom, Singapore, and other countries), the PTO would be free from the constraints of the proposed rule with respect to those foreign offices. Yet at some point citizens of this country are likely to wonder: why is the PTO free to share work with an examiner in an entrepreneurial patent-examining office in Denmark but not an entrepreneurial examining office in Denver?