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COMPULSORY LICENSING OF PATENTED INVENTIONS: COMPARING UNITED STATES LAW AND PRACTICE WITH THE OPTIONS UNDER TRIPS

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COMPULSORY LICENSING OF PATENTED INVENTIONS: COMPARING UNITED STATES LAW AND PRACTICE WITH THE OPTIONS UNDER TRIPS

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Introduction

The prevailing ethos maintains that “unlike many countries, the United States takes a dim view of compulsory licensing.” That widely accepted thesis turns out to misstate and distort a considerably more complex and nuanced situation than is generally understood. In my view, it would be more accurate to say that the United States takes a dim view of the compulsory licenses that other countries prefer to employ, but it is very attached to those modalities of compulsory licensing that it routinely continues to impose.¹

Let me begin by identifying at least six prototypical types of compulsory licenses that are widely recognized around the world in one form or another and that are all fully consistent with article 31 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) of 1994. They are:

1. Compulsory licenses imposed to rectify violations of competition law (antitrust law).²
2. Compulsory licenses imposed to rectify abuses of the patentee’s exclusive rights.³
3. Compulsory licenses issued in the public interest, to address environmental, public health, national security or economic development concerns by promoting third-party production of the patented products (at lower prices).⁴

¹ This paper is based on three studies conducted for UNCTAD/ICTSD, viz: J.H. Reichman with Catherine H. Hasenzahl, *Nonvoluntary Licensing of Patented Inventions, Part I, Historical Perspective, Legal Framework Under TRIPS and an Overview of the Practice in Canada and the United States of America* (UNCTAD/ICTSD 2002); Part II, *The Canadian Experience*, UNCTAD/ICTSD 2002); Part III, *The Law and Practice of the United States* (UNCTAD/ICTSD 2003), available online [hereinafter *Law and Practice of the United States*].

² See TRIPS Agreement, article 31(k); see also *id.* arts. 8, 40.1.

³ See TRIPS Agreement, arts. 31 8.2, 40.2; see also Paris Convention for the Protection of Industrial Property (1883), art. 5A.

4. Compulsory licenses issued on behalf of owners of dependent patents, that is, to allow holders of improvement patents to make use of dominant patents that would otherwise block technical progress.⁵

5. Compulsory licenses imposed by governments to permit them and their contractors to make non-commercial public use of the patents without the consent of the rights holders (government use).⁶

6. A new compulsory license for the exportation of pharmaceutical products to poor countries that lack the capacity to manufacture needed drugs under their own compulsory licenses.⁷

With this background in mind, let us compare United States law and practice with the larger framework found in foreign and international law.

I. REMEDIES THE UNITED STATES FREQUENTLY USED IN THE PAST (AND STILL USES MORE THAN IS COMMONLY SUPPOSED)

Here we are talking about compulsory licenses used to remedy antitrust violations and misuses (abuses) of a patentee's exclusive rights. One must take care to distinguish these two categories in United States law, however. Antitrust violations normally require a showing of market power. Common law doctrines of misuse historically did not require any showing of market power, as I will explain later, although the case law seems to be changing in this regard.

A. COMPETITION LAW (ANTITRUST LAW)

The United States has no general statute authorizing compulsory licenses for abuse of patents, as many other countries have (for example, Canada, South Africa, Italy, and to a certain extent, Brazil). Nevertheless, from the 1940s to

⁴ See TRIPS Agreement, article 31; BODENHAUSEN (1967).

⁵ See TRIPS Agreement, article 31(l).

⁶ See TRIPS Agreement, article 31(b).

⁷ See General Council, Decision of 6 December 2005, Amendment of the TRIPS Agreement, Annex to the Protocol Amending the TRIPS Agreement, article 31bis, WTO doc. WT/C/641, 8 Dec. 2005 [hereinafter Amended Article 31bis].

⁸ [cite]

the 1970s, U.S. courts made frequent use of compulsory licenses to remedy perceived violations of the antitrust laws, and especially to break up patent pools. F. M. Scherer claims that U.S. courts issued thousands of compulsory licenses in that period.⁸

Generally speaking, in the period under review, a pro-competitive outlook prevailed in Congress, while both the regulatory agencies and the federal appellate courts were hostile to patents. Hence, there was a tendency to provide weak patent protection and strong antitrust enforcement.

This situation has been replaced from the 1980s on with a regime of relatively strong patent protection and relatively weak enforcement of competition law. Some argue that the era of strong patent protection stems from the creation of the U.S. Court of Appeals for the Federal Circuit in 1982, which has exclusive jurisdiction of appeals from the patent office (USPTO) and from the federal district courts that try patent infringement cases. Meanwhile, the antitrust authorities and the courts have increasingly viewed antitrust law and patents as sharing a common concern for the promotion of innovation and markets for innovation.⁹ From this perspective, the patentee's exclusive rights are seen as providing needed incentives for efficient allocation of resources to innovative pursuits, and the antitrust laws should generally avoid disrupting these incentives to invest, except in cases where there is clear evidence of monopolization or attempted monopolization.

Under current U.S. law, for example, one cannot challenge a patentee for charging "excessive prices" as a form of abuse (unless there is other compelling evidence of an attempt to monopolize the market). Otherwise, the power to charge high prices is viewed as inherent in the granting of a patent, which imposes short-term social costs in exchange for long-term social gains in greater competition through innovation. By the same token, courts deem the patent itself to empower the patentee to refuse to deal with third parties, hence refusals to deal cannot normally qualify as antitrust violations in the U.S.¹⁰

Let me stress that this view is not mandated by international law. Bodenhause's commentary on the Paris Convention, for example, clearly recognizes that both excessive prices that result in under supply of the market and refusals to deal were tenable claims of abuse under article 5A of that Convention,¹¹ and both South Africa and Brazil have made such claims stick in recent cases pertaining to pharmaceuticals.¹² Nothing in the TRIPS Agreement disturbs this result, in

part because article 5A of the Paris Convention has been incorporated directly into TRIPS. Whether states fully retain the right to treat non-local working of patents as an abuse under article 5A, despite the patentees' exclusive right to import under article 27 of TRIPS, remains an open question,¹³ although I personally believe that articles 8 and 40 of TRIPS continue to allow Brazil to treat nonworking as an abuse, especially if prices remain high.

If the interface between antitrust law and intellectual property law thus appears more rigid in the U.S. than in the E.U., this follows in part because the U.S. has not adopted the doctrine of "abuse of a dominant position."¹⁴ In both the U.S. and the E.U., an antitrust claim normally requires a showing of market power. Once it is shown in the U.S., however, the plaintiff must also usually prove "monopolization," typically through the power to restrict output and control prices¹⁵ beyond the level justified by exclusive rights of the patent itself, which presumptively provides a valid justification for a refusal to deal.¹⁶ While patentees in the U.S. increasingly exercise refusals to deal with a view to strengthening their position in ancillary markets, such as spare parts or services, they rarely can "monopolize" those markets in the technical sense that U.S. law seems to require.

In the European Union, by contrast, "dominance" as typically shown by market power may have more market effects than control over prices and output. The concept of dominance is broad because it encompasses the

⁹ See, e.g., *Data General Corporation v. Grumman System Support Corporation*, 36 F.3d 1147 (1994) at 1184-1185.

¹⁰ *In re Independent Service Organizations Antitrust Litigation*, 203 F.3d 1322 (Fed. Cir. 2000).

¹¹ BODENHAUSEN [1967].

¹² [cites]

¹³ [cite]

¹⁴ E. Arezzo, *Monopolization, Abuse of Dominant Position and Intellectual Property Rights* (unpublished paper on file with the author).

¹⁵ In theory, once can also prove an attempt to monopolize in the absence of market power, but in practice this claim has become extremely difficult to establish.

¹⁶ In this sense see *Data General Corporation v. Grumman System Support Corporation*, 36 F.3d 1147 (1994) and *In re Independent Service Organizations Antitrust Litigation*, 203 F.3d 1322 (Fed. Cir. 2000); but for a different holding, see *Image Technical Service Inc. v. Eastman Kodak Co.*, 125 F.3d 1195 (9th Cir. 1997).

power to make business strategies without constraints from competitors or loss of consumers.¹⁷ A position of dominance accordingly exposes even an intellectual property right holder to claims of abusive leveraging on a different market segment, say, through refusals to deal or to license spare parts or service equipment,¹⁸ and also to claims of abuse in the form of predatory or discriminatory pricing.¹⁹ Recently, moreover, the European Commission has been willing to find that intellectual property rights coupled with dominance can give rise to de facto standards that can have the effect of foreclosing new entrants²⁰ or new products.²¹ In such cases, the authorities may contemplate imposing a compulsory license on reasoning analogous to the “essential facility” doctrine, an unlikely outcome in the United States.

In the U.S., there was one recent decision by the Ninth Circuit imposing a compulsory license for a refusal to deal, in *Image Technical Services v. Eastman Kodak*.²² Here Kodak refused to supply replacement parts to third party manufacturers of those parts, because Kodak wanted to take over the after market for parts and drive its former licensees out. The Ninth Circuit upheld a finding of illegal monopolization and attempt to monopolize in violation of section 2 of the Sherman Act, and also upheld a compulsory license. In so doing, the court declared that the patent holder could not use the patent to thwart competition in ways that were a pretext for anticompetitive behavior.²³ The Kodak decision seems to resemble the abusive “monopoly leveraging” approach

¹⁷ *United Brands Company and United Brands Continentaal BV v. Commission of the European Communities*, case 27/76, [1978] ECR 207, § 65; *Hoffman – La Roche v. Commission of the European Communities*, case 85/76, [1979] ECR 461, § 38. In theory, there is no room for a claim of “attempt to monopolize” in E-U law, which makes it theoretically weaker than U-S law in one respect, because such a claim can be made without a showing of market power. But this claim is only theoretically available in U-S law at the present time.

¹⁸ See *Volvo v. Erik Veng*, case 238/87, [1988] ECR 6211 (holding that a refusal to grant a license by an IPR owner could not of itself amount to an abuse of dominant position since the right to exclude third parties from the “manufacturing and selling or importing products incorporating the design constitute the very subject matter of [Volvo’s] exclusive right;” but explaining that a refusal to license an IPR “[...] may be prohibited by art. 82 if it involves, on the part of an undertaking holding a dominant position, certain abusive conduct such as the arbitrary refusal to supply spare parts to independent repairers, the fixing of prices for spare parts at an unfair level or a decision no longer to produce spare parts for a particular model even if many cars of that model are still in circulation [...]).

of the European Union in that it punished a patentee who suspended supplies of parts and equipment to competitors. However, this decision by the United States Court of Appeals for the Ninth Circuit was rejected by the Court of Appeals for the Federal Circuit, which took exactly the opposite position in an analogous case, *In re Independent Service Organizations Antitrust Litigation (ISO v. Xerox)*.²⁴ The facts were similar in that Xerox refused to sell copyrighted manuals for its copiers or to license patented software to the ISO, which had previously competed to service its Xerox copiers. The Federal Circuit rejected the Ninth Circuit's view and held that "the absolute right of the owner of patented or copyrighted products to refuse to sell to others could be overcome only if the patent or copyright had been obtained by illegal means."

The Federal Circuit thus viewed any anticompetitive effects on the ancillary market as excused by the very existence of the power to exclude that patents confer, and it rejected any "injury to competition" test of refusal to deal in such cases.²⁵ While many academics prefer the view of the Ninth Circuit, most observers predict that the Supreme Court would follow the Federal Circuit and deny a patentee's refusal to deal as grounds for antitrust violation.

Nevertheless, one should not conclude that the U.S. antitrust authorities are asleep, despite the deference they have showed patentees in recent years, nor should one suppose that compulsory licenses are no longer part of the arsenal of antitrust remedies. The opposite is true, especially if one considers that about 75-80 per cent of all civil cases handled by the Antitrust Department of DOJ or by the FTC are settled without litigation by consent decrees. A surprisingly large number of these decrees entail divestiture or compulsory licenses, including know-how, at low royalty rates, especially in cases of mergers and acquisitions.

¹⁹ Under European antitrust law, conduct involving predatory and/or discriminatory pricing can be punished as an abuse if the undertaking is found to be dominant. Specifically, art. 82(a) EC Treaty expressly holds that an abuse of dominant position may consist in "directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions" ('predatory pricing') or in "applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage" ('discriminatory pricing').

²⁰ RTE, IPT vs. Commission, case C-241/91, C-242/91, [1995], ECR 1141 ('so called Magill case'); case COMP/C-3/37.792, Microsoft 'web publication of non-confidential version', available at <http://www.europa.eu.int/comm/competition/antitrust/cases/decisions/37792/en.pdf>

Between 1995 and 1999, for example, the FTC brought no fewer than eleven actions challenging mergers concerning medical and health care products, “the largest number in any single industry.” Many compulsory licenses were imposed. There was also a recent FTC order for antitrust violations against Pfizer and Cynamid, upheld in the Sixth Circuit, which resulted in a compulsory license bearing a 2.5 per cent royalty on patented antibiotics.²⁶

The Federal Trade Commission has recently held hearings on the interface between intellectual property and antitrust law, and it has criticized the practice of issuing weak patents under low standards of eligibility. On the whole, however, the regulatory authorities are still leery of intervening in this area, and they fear the supposed adverse effects of compulsory licenses on innovation. However, Scherer found no such adverse effects even when the courts were dishing out compulsory licenses in the period 1940s-1970s, and even Professor Hovenkamp thought more compulsory licenses should have been issued in the Microsoft case.

In any event, while it is clear that efficiency has trumped fairness in United States antitrust law,²⁷ concerns about fairness and barriers to entry remain legitimate in developing countries. They have much to learn from the older U.S. cases regulating the interface between intellectual property and competition law.

B. MISUSE OF PATENTS

United States patent law does not provide an abuse statute akin to the patent

²¹ NDC Health vs. IMS Health, Case COMP D³/38.044 (2005).

²² Image Technical Service Inc. v. Eastman Kodak Co., 125 F.3d 1195 (9th Cir. 1997).

²³ [“pretextual business justification to risk anticompetitive conduct” (Bauer at 41)].

²⁴ In re Independent Service Organizations Antitrust Litigation, 203 F.3d 1322 (Fed. Cir. 2000).

²⁵ Bauer, at 4.

²⁶[cite]

²⁷See Verizon Communications Inc. v. Law Offices of Curtis V. Trinko LLP, 540 U.S. 398, 124 S.Ct. 872 (2004); E. Fox: What is Harm to Competition? Exclusionary Practices and Anticompetitive Effect, 70 ANTITRUST L.J. 371 (2002).

²⁸ See HERBERT HOVENKAMP, MARK D. JANIS, MARK A. LEMLEY, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW §3.1 (2001) [hereinafter IP AND ANTITRUST]; see also Brunswick Corp. v. Reigel Textile Corp., 752 F.2d 261 (7th Cir. 1984) (holding that in order for a patent holder’s behavior to have antitrust implications “[t]he patent must dominate in a real market.”).

law of Canada. It does, however, provide the judicially crafted remedy of misuse of patent rights.

1. GENERAL CONCEPT OF MISUSE

The doctrine of misuse is closely related to antitrust law and, according to one source, “most findings of misuse would also violate the antitrust laws.”²⁸ Given the lack of statutory recognition of abuse of the exclusive rights of a patent, the doctrine of misuse has developed as an affirmative defense to a claim of infringement, where a patent has been used to limit competition by expanding the exclusive patent rights beyond their legal scope.²⁹ Although some commentators prefer to view misuse and antitrust as co-extensive, the judiciary still regards it as an infringement “defense grounded in part on intellectual property policy and not entirely on antitrust principles.”³⁰

The first case that applied the doctrine was *Motion Picture Patents Co. v. Universal Film Mfg. Co.*³¹ in 1917, where the Supreme Court found that the patent holder’s refusal to license a patent covering the threading of film into a projector, absent a notice that only the patent holder’s film was to be used in the projector, constituted a licensing restriction that was outside the scope of the patent.³² Although the Court focused on competition issues, it failed to reference the antitrust law in its opinion, and premised the decision on issues of patent policy.³³ The Court held that because the licensing restriction was “wholly outside the scope and purpose of our patent laws,” and sustaining it “would be gravely injurious to that public interest, which we have seen is more a favorite of the law than is the promotion of private fortunes.”³⁴ This case highlights the doctrinal concern with over-extension of the patent monopoly and the particular practice of tying.³⁵ To make a claim of patent misuse, a party must demonstrate that the patent has been “broadened” in some manner and that the broadening has an effect on competition.³⁶ On occasion the courts have found some behavior to constitute misuse per se, including tying arrangements³⁷ and price fixing,³⁸ and where such is found, there is no need to demonstrate the anticompetitive effect of the behavior.³⁹ Where the behavior does not constitute per se misuse, the court evaluates it under the “rule of

²⁹ See IP AND ANTITRUST: §3.2(b).

³⁰ See IP AND ANTITRUST: §3.1.

³¹ 243 U.S. 502 (1917).

³² See *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 513 (1917).

³³ See IP AND ANTITRUST: §3.2(a). The Court noted that “under color of its patent the owner intends

reason” standard to determine “whether the questioned practice imposes an unreasonable restraint on competition, taking into account a variety of factors, including specific information about the relevant business, its condition before and after the restraint was imposed, and the restraint’s history, nature and effect.”⁴⁰

The misuse doctrine is also concerned with the integrity of the patent system, as “[p]atent policy permits the grant of exclusive rights only under certain conditions and only within a limited scope, and the expansion of that scope through coercive use of a government-granted legal right has been thought to undermine the limitations built into the patent law.”⁴¹ Some have argued that misuse per se should be dealt with exclusively under competition law,⁴² although that would not address the concern that some behavior that falls outside the purview of competition law nonetheless tests the boundaries of the patent system.⁴³ Although there is no statutory recognition of what constitutes misuse, in 1952 the United States Congress passed the Patent Misuse Reform Act⁴⁴ to clarify what behavior did not constitute misuse, to which it subsequently added two more items in 1988.⁴⁵ The latter addition to the law provided that:

(d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed

³⁴ Motion Picture Patents Co. v. Universal Film Mfg. Co., 243 U.S. 502, 519 (1917).

³⁵ See IP AND ANTITRUST, §3.2(a).

³⁶ See Virginia Panel Corp. v. MAC Panel Corp., 133 F.3d 860 (Fed. Cir. 1997) (quoting Windsurfing Int’l v. AMF Inc., 782 F.2d 995 (Fed. Cir. 1986)).

³⁷ See Virginia Panel Corp. v. MAC Panel Corp., 133 F.3d 860 (Fed. Cir. 1997). It is important to note that for tying to be treated as a per se misuse, the patent holder must possess at least some form of market power. See id.

³⁸ See Mallinckrodt v. Medipart, 976 F.2d 700 (Fed. Cir. 1992).

³⁹ See IP AND ANTITRUST, §3.2(b).

⁴⁰ See Virginia Panel Corp. v. MAC Panel Corp., 133 F.3d 860 (Fed. Cir. 1997). A “rule of reason” inquiry requires consideration of economic circumstances, such as definition of the relevant market and barriers to entry, because the mere existence of intellectual property rights does not confer economic power. See IP AND ANTITRUST, §3.3(c). “Rule of reason” also requires analysis of the pro-competitive effects of the given behavior, which allows the patent holder the opportunity to justify its actions, although the benefits must be market related. See id.

guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following:

- (1) derived revenue from acts which, if performed by another without his consent, would constitute contributory infringement of the patent;
- (2) licensed or authorized another to perform acts, which if performed without his consent, would constitute contributory infringement of the patent;
- (3) sought to enforce his patent rights against infringement or contributory infringement;
- (4) refused to license or use any rights to the patent; or
- (5) conditioned the license of any rights to the patent, or sale of the patent product, on the acquisition of a license to the rights in another patent or purchase of a separate product, unless in view of the circumstances, the patent owner has market power in the relevant market for the patent or patent product on which the license or sale is conditioned.⁴⁶

Tying arrangements constitute the most common form of misuse, one that was found in roughly half of the Supreme Court cases concerning the doctrine.⁴⁷ There are three basic kinds of tying arrangements: where the patent holder requires the licensee to purchase unpatented products as a condition of the patent license, where the patent holder's attempt to enforce its exclusive rights in a case on contributory infringement imposes a tie, and where the patent holder requires a package license of more than one patent.⁴⁸

Morton Salt v. G.S. Suppinger was one of the earliest misuse cases where various kinds of tying were found.⁴⁹ Morton Salt, the patent holder for a machine that

⁴¹ See IP AND ANTITRUST, §3.2(c).

⁴² See *USM Corp. v. SPS Technology, Inc.*, 694 F.2d 505, 512 (7th Cir. 1982) (where Judge Posner suggests that the doctrine of misuse arose before the body of antitrust law was fully developed and the doctrine's continued applicability subjects patent holders to "debilitating uncertainty").

⁴³ See IP AND ANTITRUST, §3.3(b).

⁴⁴ Patent Misuse Reform Act of 1952, 35 U.S.C. §271(d)(1)-(3).

⁴⁵ Patent Misuse Reform Act of 1988, 35 U.S.C. §271(d)(4)-(5).

⁴⁶ See *id.*

⁴⁷ See IP AND ANTITRUST, §3.3(b).

⁴⁸ See *id.*

would deposit salt tablets into canned goods, conditioned a license to lease a machine on the prospective licensee's agreement to purchase all salt tablets for the machine from Morton Salt. Morton Salt initiated a suit for patent infringement against Suppinger for its production of a similar machine that infringed Morton Salt's patent.

The Court denied Morton access to equitable relief of an injunction given the illicit tying arrangement that the company had engaged in, viewing the practice as an effort "to suppress competition in the sale of an unpatented article."⁵⁰ Although the Court was concerned about issues of competition, it found misuse in violation of the patent law even if the tying arrangement did not contravene the antitrust law. The Court premised its finding of misuse on the mere existence of the patent for the salt deposit machine, and then assumed that the patent holder had a monopoly in the tying market.⁵¹ However, this and later related cases were decided before Congress codified the view that tying arrangements do not constitute misuse unless there is a demonstration of the patentee's market power "in the relevant market for the patent or patent product on which the license or sale is conditioned."⁵²

The 1988 Patent Misuse Reform Act now requires that in order to make a claim of patent misuse, the patent holder's market power in the tying market must be demonstrated, as well as the anticompetitive effects of the arrangement on the relevant market for the tied products.⁵³ The precise implications of this provision for both misuse and antitrust law were then re-examined and interpreted in a recent decision by the United States Supreme Court, *Illinois Tool Works, Inc. v. Independent Ink, Inc.*⁵⁴

The Supreme Court noted that, over the years, "its strong disapproval of tying arrangements has substantially diminished" because the view that some

⁴⁹ 314 U.S. 488 (1942).

⁵⁰ *Morton Salt v. G.S. Suppinger*, 314 U.S. 488 (1942).

⁵¹ See IP AND ANTITRUST, §3.3(b). The Federal Circuit reached a similar result in *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 61 (Fed. Cir. 1986), where the court stated that the existence of misuse was premised on the following proofs: (1) the existence of two separate things; (2) both of which are staple items of commerce; (3) that are tied together. The court neglected to inquire into market power or the effect in the tied product market, but did note that such concerns of antitrust were not necessarily relevant to a misuse claim.

“tying arrangements may well be pro-competitive ultimately prevailed.”⁵⁵ Some of the past confusion stemmed from an erroneous presumption that a patent intrinsically confers market power, a presumption that “migrated from patent law to antitrust law.”⁵⁶ However, Congress rejected that presumption of market power in the patent misuse context with its 1988 Amendment of Section 271(d) of the Patent Act,⁵⁷ and made it clear that, without proof that defendant had market power in the market for the patented tying product, “its conduct at issue in this case was neither ‘misuse’ nor an ‘illegal extension of the patent right.’”⁵⁸

The Court then observed that it made no sense to preserve such a presumption of market power with a *per se* rule of illegality in antitrust cases of tying, which could result in criminal punishment of up to ten years in prison, when it no longer applied in cases of patent misuse, where the remedy was merely a judicial refusal to enforce the patent.⁵⁹ Henceforth, with respect to both antitrust violations and misuse, the Court would require proof of market power in challenged tying arrangements, and it would apply a rule-of-reason evaluation of the alleged anticompetitive effects. “While some such arrangements are still unlawful, such as those that are the product of a true monopoly, or market-wide conspiracy...that conclusion must be supported by proof of market power rather than by a presumption thereof.”⁶⁰

The Court supported its decision to align both misuse and antitrust law with regard to cases of tying by references to the academic literature (mostly elaborating the Chicago School’s approach)⁶¹ and to the enforcement agencies’ own 1995 Guidelines, which stated that they “will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner.”⁶² The Court went beyond the Guidelines, however, by rejecting any form of rebuttable presumption of guilt or misuse in tying cases because “[m]any tying

⁵² See *supra* note 46 and accompanying text.

⁵³ Patent Misuse Reform Act, 35 U.S.C. §271(d)(5).

⁵⁴ *Illinois Tool Works, Inc. v. Independent Ink, Inc.*, 547 U.S. ____ (2006).

⁵⁵ *Illinois Tool Works*, at 5-6.

⁵⁶ *Id.* at 9 (citing *International Salt Co. v. United States*, 332 U.S. 392 (1947) and *Mercoid Corp. v. Mid-Continental Investment Co.*, 320 U.S. 661, 554-65 (1944)).

⁵⁷ See *supra* note 46 and accompanying text.

⁵⁸ *Illinois Tool Works, Inc. v. Independent Ink, Inc.*, 547 U.S. ____ (2006) (at p. 12).

arrangements, even those involving patents and requirements ties, are fully consistent with a free and competitive market.”⁶³ Misuse can also be found in relation to royalty arrangements in voluntary licenses. Charging competing licensees discriminatory royalty rates may constitute misuse where the different rates are offered concurrently, and the discrimination substantially affects the competition between the competing licensees.⁶⁴ In contrast, merely charging an excessive royalty without the element of discrimination among licensees will not rise to the level of misuse.⁶⁵ It should be noted, moreover, that a refusal to deal with a party cannot constitute patent misuse in most cases under United States law, although such a refusal may constitute a violation of antitrust law.

2. REMEDIES

The remedy for misuse is that the exclusive rights of the patent holder that have been misused are rendered unenforceable.⁶⁶ Upon a finding of misuse, the courts will refuse an injunction to prevent further infringement, and they will not award damages as a consequence of the infringement to the patent holder.⁶⁷ Whether the United States practice of suspending enforcement of the patent without any royalty in cases of misuse is fully compliant with the TRIPS Agreement and Paris Convention remains an open question.⁶⁸

In *Senza-Gel Corp. v. Sieffhart*, Senza-Gel sued several parties for infringing its process patent for the processing of hams. Senza-Gel refused to permit use of its patented process unless users leased its macerator machine. The court upheld the District Court’s determination that the macerator machine

⁵⁹ *Illinois Tool Works*, at 13.

⁶⁰ *Id.*

⁶¹ See *id.*, at 13-14, n.4 (citing Areeda, Burchfield, *IP AND ANTITRUST*, §4.2(a), and Landes and Posner).

⁶² U.S. Department of Justice and FTC, *Antitrust Guidelines for the Licensing of Intellectual Property* §2.2 (April 6, 1995).

⁶³ *Illinois Tool Works, Inc. v. Independent Ink, Inc.*, 547 U.S. ____ (2006) (at p. 16).

⁶⁴ See *LaPeyre v. FTC*, 336 F.2d 117 (5th Cir. 1966).

⁶⁵ See *Brulotte v. Thys. Co.*, 379 U.S. 29, 143 U.S.P.Q. 264, 266 (1964) (where the Supreme Court stated that “a patent empowers the owner to exact royalties as high as he can negotiate with the leverage of that monopoly.”); see also Harold Einhorn and David A. Einhorn, *PATENT LICENSING TRANSACTIONS* §7.05[1] (2001) [hereinafter *EINHORN*].

was capable of substantial non-infringing use, and therefore a staple item of commerce.⁶⁹ This finding, in combination with Senza-Gel's own admission that it never offered to license the patented process without an attendant agreement to lease the macerator, led the Federal Circuit to uphold the District Court's determination that such a tying arrangement constituted misuse of patent rights by Senza-Gel.⁷⁰ To remedy the misuse, the District Court granted the defendants' motion for summary judgment in the infringement action brought by Senza-Gel on the affirmative defense of patent misuse as a result of the illegal tying arrangement, which the Federal Circuit upheld.⁷¹ This effectively rendered Senza-Gel's exclusive rights in the patented process unenforceable.

A related question concerns whether the patent holder may cure the abuse and therefore find its rights under the patent once again enforceable. The rule is that the patent holder may cure the abuse, although in practice it is not cured easily.⁷² In order to effect a cure, the misuse must cease, and its consequences must be "fully dissipated"⁷³ or "purged."⁷⁴ Misuse may be purged during the course of an infringement action where the patent holder abandons the contested behavior and none of the illegal effects of the behavior remain.⁷⁵ Some forms of misuse cannot be cured, however, as for example when the behavior includes some form of fraud or inequitable conduct in the patent holder's acquisition of the patent in question.⁷⁶

One noted problem with the application of the misuse doctrine concerns its lack of proportionality regarding the misuse behavior and the applicable remedy. There is no operative distinction in the law between a misuse that causes significant harm and one that causes only a little harm.⁷⁷ Therefore, often the applied remedy is "not necessarily (or even likely) well matched to the problem that it is designed to solve."⁷⁸ When the effect of the misuse is

⁶⁶ See IP AND ANTITRUST, §3.6(a).

⁶⁷ See *id.*

⁶⁸ See TRIPS Agreement, article 31(k) and Paris Convention, art. 5A(2),(3).

⁶⁹ See *Senza-Gel v. Sieffhart*, 803 F.2d 661, 668 (Fed. Cir. 1986).

⁷⁰ See *Senza-Gel v. Sieffhart*, 803 F.2d 661, 668 (Fed. Cir. 1986). This case was decided prior to the 1988 amendment requiring a showing of market power in patent tying cases.

⁷¹ See *Senza-Gel v. Sieffhart*, 803 F.2d 661, 668 (Fed. Cir. 1986).

⁷² See IP AND ANTITRUST, §3.6(a).

relatively minor, the remedy of unenforceability seems harsh, and it creates a free-rider problem by allowing infringers to derive significant benefit in the face of the patent holder's inability to enforce its rights.⁷⁹ This problem is understood by the courts, and it may cause them to react by refusing to find the misuse in order to avoid imposing such a harsh penalty.

3. EVALUATION OF THE MISUSE DOCTRINE

On the positive side, the misuse doctrine permits courts to deal with perceived undue extensions of patent scope in terms of patent policy, without necessarily demanding proof of market power. It can also allow courts to address anticompetitive effects of patents, or adverse impacts on other public policies, without regard to the degree of "monopolization." The misuse doctrine in developing countries, for example, could allow the authorities to challenge excessive pricing, refusals to deal, and the practice of tying unpatented products with patents or patented products without a demonstration of market power.

It is fair to ask whether the common law patent misuse doctrine in the United States retains much force if it cannot be invoked to deal with excessive prices, refusals to deal and, now, even tying without evidence of monopolization or attempted monopolization. On the whole, the Federal Circuit dislikes the doctrine of misuse, and it had already tended to align misuse and antitrust law in some recent cases even before the 2006 Supreme Court decision in *Illinois Tool Works*, which was discussed above. Some commentators have criticized the Federal Circuit, however, and argue for the maintenance of a robust misuse doctrine not linked to antitrust law. Paradoxically or not, cases

⁷³ See *B.B. Chem. Co. v. Ellis*, 314 U.S. 495, 498 (1942); *Morton Salt v. G.S. Suppinger Co.*, 314 U.S. 488 (1942).

⁷⁴ See *Senza-Gel v. Sieffhart*, 803 F.2d 661, 668 (Fed. Cir. 1986).

⁷⁵ See *Printing Plate Supply Co. v. Crescent Engraving Co.*, 246 F. Supp. 654 (W.D. Mich. 1965) (noting cases where abuse has been cured during the pendency of an action for patent infringement); see also *EINHORN*, supra note 51, at §7.05[4].

⁷⁶ See *Kearney & Trecker Corp. v. Giddings & Lewis Inc.*, 452 F.2d 579 (7th Cir. 1971); see also *EINHORN*, supra note 51, at §7.05[4].

⁷⁷ See *IP AND ANTITRUST*, §3.6(a).

⁷⁸ *Id.*

⁷⁹ See *id.*

⁸⁰ Domestic laws may vary from one jurisdiction to another.

of misuse of copyrights have mushroomed since computer programs were made copyrightable subject matter in 1980, even as misuse of patents has increasingly become a disfavored action.

From a comparative perspective, the Supreme Court's 2006 decision in *Illinois Tool Works* seems to have widened the distance between the U.S. and the E.U. with respect to notions of abuse of intellectual property rights. Prior to 1988, U.S. courts could reach both refusals to deal and tying as forms of misuse without a showing of market power; while E.U. courts, which normally lack a patent misuse doctrine as such,⁸⁰ could reach these practices only with a showing of dominance (which implies market power). After *Illinois Tool Works*, however, U.S. authorities seem unlikely to challenge a patentee's tying arrangement or refusals to deal, despite a showing of market power, without presumably offering evidence of some power to restrict output and control prices as indices of monopolization.⁸¹ How much life is left in the very concept of patent misuse as a common law defense after *Illinois Tool Works* thus

remains an open question. Moreover, there is reason to fear that the European Commission might decide to soften its own position in the near future, so as to embrace the hands off approach of the current U.S. Supreme Court.

II. REMEDIES SOMETIMES AVAILABLE IN THEORY BUT ALMOST NEVER IN PRACTICE

A. NO GENERAL PROVISION ALLOWING COMPULSORY LICENSES ON PUBLIC INTEREST GROUNDS

United States patent law differs from the laws of most other countries in that it has no general provision allowing the authorities to override patents in the larger public interest. Congress has consistently and repeatedly declined to enact any such provision enabling the authorities, purely on grounds of public interest, to allow third parties to use a patented invention without the patentee's permission and thus to supply the market at more competitive prices. This remains true even when the patents in question have not been practiced or licensed, unless the authorities can establish either misuse or the elements of an antitrust violation.

⁸¹ This assumes that the Ninth Circuit's contrary view in the *Kodak* case will wither under the implicit disapproval of *Illinois Tool Works*.

B. COUNTERVAILING FACTORS

This gap in United States law is, however, offset by at least three countervailing tendencies. First there are at least two old cases suggesting that courts may retain the equitable power to impose compulsory licenses in the public interest under extraordinary circumstances. The present-day validity of these cases remains uncertain, although they have never been overruled.

Second, Congress has enacted a number of compulsory licensing provisions in specialized statutes dealing with issues of intrinsic public interest, such as the environment (Clean Air Act) and government-funded research (Bayh-Dole Act). However, no compulsory licenses have actually been issued under these provisions.

Third, while other countries have traditionally resorted to compulsory licenses on public interest grounds to deal with vital national concerns, the United States tends to deal with such concerns by invoking a codified compulsory license for government use. Because this provision enables the government to shelter private contractors working for the government from patent infringement, it can serve many of the purposes that other states seek to pursue through public interest licenses to third parties. This little known and frequently used remedy of government use is explained later in this paper.

For present purposes, nevertheless, it should be clear that, absent a general public-interest clause on the books, a country that needs to break a patent is normally constrained to invoke either government use or anticompetitive conduct, including abuse or misuse of patents. Developing countries should not so limit themselves unnecessarily, given that public-interest overrides remain consistent with both the Paris Convention and the TRIPS Agreement. On the contrary, because developing countries must be especially concerned to balance private intellectual property rights against the need to supply other public goods, such as public health, education, and a sound environment,⁸² they should retain the power to impose compulsory licenses in the public interest, independent of any powers to regulate competition or to invoke government use.

In this regard, the U.S. experience with regard to patents on government-

funded research is particularly revealing. The Bayh-Dole Act of 1980 already allows the government to exercise “march in” rights with regard to government-funded research results that universities might otherwise patent; and there is also a built-in anti-abuse clause requiring products manufactured under the resulting patents to be made available to the public on reasonable terms, including affordable prices. However, the National Institutes of Health (NIH) declined to exercise these powers even in a clamorous case of price gouging with regard to at least one HIV/AIDS drug,⁸³ and the statute makes triggering these measures subject to cumbersome procedures at best.⁸⁴

Developing countries, such as Brazil, are well advised to avoid these shortcomings and to ensure that government-funded research results are made subject to certain guarantees in the public interest. Moreover, care must be taken to ensure that such results are generally available to public science for research purposes.⁸⁵ Finally, the granting authorities should have the power to require non-exclusive licensing of government-funded research results in the public interest, when circumstances make this advisable, especially for purposes of facilitating further scientific research.

C. NO GENERAL PROVISION FOR COMPULSORY LICENSING OF DEPENDENT PATENTS

So-called “dependent patents” arise when a patented improvement, however substantial in character, cannot be practiced without infringing a pre-existing patent, known as the dominant patent. Left to themselves, the parties may arrive at a voluntary license, which allows the improved product to reach the market. If, however, the parties bargain to impasse, the dominant patent blocks the exercise of the improvement patent, and the public is deprived of its benefits. To avoid this result, most countries provide for a compulsory license to force the dominant patent to co-exist with the improvement patent, with provisions for mutual cross-licensing on reasonable royalties. Such licenses are consistent with article 31(l) of the TRIPS Agreement.

⁸² See Maskus & Reichman (2005).

⁸³ See Reichman, Testimony Before NIH Hearing (2004).

⁸⁴ See Rai & Eisenberg (2003).

⁸⁵ Reichman & Uhlir (2003).

The United States has not codified a compulsory license for dependent patents, and there is accordingly no provision to prevent the parties from bargaining to impasse, unless their refusals to deal rise to the level of a full-fledged antitrust violation.⁸⁶ As a result, serious instances of socially costly blocking effects have been reported. While these effects may be attenuated if one of the parties invents around the other's patent, the social costs of blocking effects are usually dismissed as short-term costs of the patent system that are offset by its long-term benefits.

Professors Rai and Eisenberg have pointed out that the "march-in" provisions under the Bayh-Dole Act of 1980 could allow the NIH to issue compulsory licenses to unblock patentable improvements if the inventions resulted from federally funded research results.⁸⁷ As mentioned above, the NIH has so far been reluctant to exercise these rights. Nevertheless, recent research shows that university technology transfer offices have increasingly built into their contracts a kind of dependent cross-licensing provision that enables the licensor to make use of later patents for further research and improvements.⁸⁸

While the laws of many countries formally provide the possibility of imposing compulsory licenses to avoid blocking effects if the dominant patent and the improver fail to agree, the authorities in these countries seldom issue such licenses in practice. An apparent exception is Italy, where dominant patentees reportedly respond promptly to requests for voluntary cross-licensing of patented improvements,⁸⁹ lest the authorities should be requested to intervene. Given that Italy's patent system seems still to operate on more of a registration than a full examination approach, this practice may reflect a mutual reluctance of the parties to have their patents tested against the eligibility requirements in court. In any event, the frequency with which these requests for voluntary licensing are reportedly accepted under the shadow of a statutory compulsory license suggests that Italy has a *de facto* liability rule governing improvements, and that parties routinely bargain around it. We intend to test this hypothesis in future research.

⁸⁶Lemley (U. TEXAS L. REV.)

⁸⁷See Rai and Eisenberg (2003) (stressing implications of the provision concerning "practical application of the invention").

⁸⁸ [cite Walsh et al. CEER study]

Developing countries should adopt legislation allowing compulsory licenses for patented improvements, in keeping with article 31(l) of the TRIPS Agreement. Besides avoiding socially costly blocking effects, such licenses could ensure that improvements within the range of local innovators can smoothly be practiced against foreign patentees. One would expect such arrangements to be particularly desirable in the pharmaceutical sector, where Brazil lags behind the large international companies in research capabilities but has plans to invest in expanding these capabilities.

III. GOVERNMENT USE: THE REMEDY OF CHOICE IN THE UNITED STATES

When assertions are made about extensive compulsory licensing of patented inventions in United States practice, the source of law most logically being referenced is the government use provision, codified at 28 United States Code 1498.⁸⁹ This provision empowers the government, or its contractors, to make any use or manufacture of a patented product or process “by or for the United States without license” and without incurring liability for infringement, other than a duty to pay “reasonable and entire compensation” to the patentee or his assignees for such use and manufacture. It was, indeed, the necessity of accommodating the United States’ reliance on this power that ultimately led the TRIPS negotiators to enable WTO member states to grant compulsory licenses for virtually any purpose under article 31.⁹¹

A. NATURE AND LIMITS OF THE REMEDY

Because the federal government is immune from any legal action under the doctrine of sovereign immunity, it was thought necessary for Congress to waive that immunity and to allow itself to be sued for patent infringement by its agencies or its contractors. This was the purpose of section 1498 and the prior provisions it replaced.⁹² As will be seen, the Court of Federal Claims has developed specific procedures and methods for determining compensation in these cases, and the government is not treated on the same footing as an

⁸⁹ Interview with Prof. Gustavo Ghidini, LUISS University, Faculty of Law, Rome, Italy.

⁹⁰ 28 U.S.C. § 1498 (2004).

⁹¹ See TRIPS Agreement, art. 31; J. WATAL,

ordinary infringer in cases arising under the statute.

Courts and commentators often characterized section 1498 as “a compulsory license in eminent domain.” This characterization implies that the exercise of this power is subject to Constitutional guarantees of citizens’ rights and that they are entitled to “just compensation” because private property is “taken” for a “public purpose.” This theory, however, has been rejected in a number of decisions.

In the 1990s, for example, panels on the United States Court of Federal Claims twice rejected the notion that a section 1498 action constituted a “taking” under the government’s eminent domain power. These panels reasoned that the patent law’s grant of exclusive rights to inventors did not encompass the right to exclude the government from using a patented invention in the first place. On this approach, which is known as the “established statutory authority” theory of government appropriation, “governmental use” represents a power reserved to the state when the patent issues. Because “the government cannot ‘take’ what it already possesses,” section 1498 “grants the government the absolute power to take a compulsory, non-exclusive license to a patented invention at will.”⁹³

This theoretical justification prevents injured patentees from claiming all the elements of compensation that might be available in a true eminent domain action, especially attorneys’ fees and litigation expenses. It further reinforces the broad powers of the government to “induce patent infringement” in order to obtain the best technology available for its agencies and contractors and to determine compensation according to its own criteria, subject to the protection of foreigners under article 31(h) of the TRIPS Agreement.⁹⁴

More recently, however, the Court of Federal Claims rejected its own prior case law embracing the “established statutory authority” rationale for government use,⁹⁵ and turned, instead, to the theory that patent rights were constitutionally protected against “takings” under the Fifth Amendment, independently of section 1498. In this case, *Zoltek Corp. v. United States*,⁹⁶ the patentee was barred from seeking compensation under section 1498 for infringement of some of the claims covered by its process patent because the products used by the government’s contractor had been made by others in Japan. This legal

⁹² See, e.g., *Zoltek Corp. v. United States*, 442 F.3rd 1345 (Fed. Cir. 2006).

conclusion followed because the Federal Circuit requires a direct infringement under section 271(a) of the patent law for government liability under section 1498,⁹⁷ and it also holds that “a process cannot be used ‘within the United States’ as required by section 271(a) unless each of the steps is performed within this country.”⁹⁸ Nevertheless, the Court of Federal Claims allowed the patentee to seek compensation against the government under the Tucker Act, on a theory that the use was also a taking of private property for public purpose under the Fifth Amendment.⁹⁹ This view, if upheld, could have broadened a patentee’s rights well beyond the established jurisprudence under section 1498.

However, a divided panel of the United States Court of Appeals for the Federal Circuit has reversed the Court of Claims on this point.¹⁰⁰ It ruled, instead, that the Supreme Court had previously decided that patentees could not sue for the taking of a property interest under the Constitution, but only for compensation under a tort theory within the parameters of section 1498.¹⁰¹ A vigorous dissent argued that, in later cases, the Supreme Court itself had implicitly changed its view and authorized a “takings” rationale,¹⁰² but the majority held that the Supreme Court itself would have to make that decision.¹⁰³ For the moment, therefore, and subject to further developments, section 1498 must be viewed as a limited waiver of sovereign immunity that rests on its own bottom, and the relevant case law can neither be expanded by reference to the “takings” jurisprudence of the Constitution nor limited by invoking a “reserved rights” theory of the patent grant.

B. STATUTORY FRAMEWORK

When evaluating the workings of section 1498, one should understand that it does not empower the government to convert a patentee’s exclusive rights into the kind of nonexclusive use rights available to private third parties under a

⁹⁴ See TRIPS Agreement, art. 31(h) (requiring the right holder to “be paid adequate compensation in the circumstances of each case, taking into account the economic value of the authorization”).

⁹⁵ [cite]

⁹⁶ *Zoltek Corp. v. United States*, 58 Fed. Cl. 688 (2003) and 51 Fed. Cl. 829 (2002), reversed on this point, 442 F.3d 1442 (Fed. Cir. 2006).

⁹⁷ See *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1316 (Fed. Cir. 2005).

⁹⁸ *Id.*, at 1318.

⁹⁹ See *Zoltek* (2003), 58 Fed. Cl. at 707.

¹⁰⁰ *Zoltek Corp. v. United States*, 442 F.3d 1345 (Fed. Cir. 2006).

typical compulsory licensing provision imposed for reasons of public interest. In this respect, government use of patents and other intellectual property rights (including copyrights, plant breeders' rights, and semiconductor chip design rights) under section 1498 is analogous to the sovereign power of eminent domain, which inheres in every nation state, even if technically the U.S. federal courts refuse to see it as a "taking" in the Constitutional sense.

While the government formally becomes the unauthorized user of the patent, it is third-party contractors for the government whose infringements are largely immunized by section 1498. For example, in the *Zoltek* case discussed above, the Lockheed Martin Corporation, under contract to the government for the supply of F-22 fighter planes, was the actual party who made use of the patented process without the patentee's permission.¹⁰⁴

Properly understood, section 1498 codifies a form of "statutory inducement of patent infringement;" and because this goal is usually accomplished by means of government contracting, it has been further characterized as facilitating the "contracting of patent infringement." In practice, the regulatory framework for government contracting of intellectual property rights covers negotiations with prospective suppliers or contractors, and the resulting contracts normally include an express "authorization and consent clause." This clause entitles the contractor "to use any invention described in and covered by a United States patent necessary for the performance of the contract," and it simultaneously avoids liability for patent infringement. Conversely, absence of such an "authorization and consent clause" may impose liability on a contractor, unless implied government consent is otherwise found.

C. REASONABLE AND ENTIRE COMPENSATION

The statute requires payment of "reasonable and entire compensation" for the government's use of a patent or copyright, and the right holder has a statutorily protected right to challenge the royalty determination before

¹⁰¹ *Zoltek*, 442 F.3rd 1345 (Fed. Cir. 2006) (citing *Schillinger v. United States*, 155 U.S. 163 (1894) and *Crozier v. Fried. Krupp Aktiengesellschaft*, 224 U.S. 290 (1912)).

¹⁰² See *Zoltek*, 442 F.3rd 1345 (dissenting opinion by J. Plager, Senior Circuit Judge) (citing *Crozier and Ruckelshaus v. Monsanto*, 467 U.S. 986, 1003-40 (1984) dealing with trade secrets).

¹⁰³ *Zoltek*, 442 F.3rd 1345.

¹⁰⁴ *Zoltek Corp. v. United States*, 442 F.3rd 1345 (Fed. Cir. 2006).

the Court of Federal Claims. In the face of an unlicensed use of a patented invention by the government, the patent holder may choose either to file an administrative claim with the relevant government agency, or to file a suit to recover reasonable and entire compensation in the Court of Federal Claims pursuant to section 1498(a). While filing an administrative claim tends to be the least expensive course of action, such claims are frequently denied.

If the patent holder fails to file a claim in one of the aforementioned ways, he is unlikely to receive compensation for the use. Moreover, litigation costs are not generally recoverable in these actions unless the patent holder is “an independent inventor, a nonprofit organization, or an entity that had no more than 500 employees at any time during the 5-year period preceding the use or manufacture of the patented invention by or for the United States.”¹⁰⁵

In the absence of guidelines from the Supreme Court, the courts had traditionally recognized three methods of determining compensation. These include: (1) the savings to the government resulting from the use of the patented invention; (2) lost profits of the patent holder; or (3) a reasonable royalty comparable to that available under a hypothetical voluntary license. Today, the Court of Federal Claims uses only the reasonable royalty method of evaluation, although profitability may become one of the ancillary factors taken into account, as discussed below. Reliance on lost profits as such has been rejected in part because of the heavy burden of proof it places on the patent holder, and mainly because it “assumes a right to exclusivity which conflicts with the government’s power of eminent domain.”¹⁰⁶

The Court of Federal Claim’s basic approach today entails determining a reasonable royalty based on a hypothetical licensing transaction and an estimate of the costs associated with the patent in question.¹⁰⁷ The Tektronix decision also provided guidance for the situation in which there was no ascertainable royalty rate by allowing a rate to be elected on the basis of royalty rates for related patents.¹⁰⁸ If there was no base royalty under actual licenses available for comparison, the Claims Court, which preceded the current U.S. Court of Federal Claims, then became willing to consider the royalty rate under a hypothetical license. “[T]he Section 1498 suit, in a sense, is a substitute for royalty negotiations that should have taken place at the time the invention was first manufactured or used by or for the government. In this context, it seems particularly appropriate to base the royalty on the outcome of a hypothetical negotiation that would have occurred at the time.”¹⁰⁹

Determining a hypothetical licensing rate under today's methodology is more refined and complex, however, because it now entails a consideration of some fifteen or more distinct factors, which were originally set out in a private infringement action in a federal district court and were subsequently recognized by the Federal Circuit in 1991 as applicable to government use cases as well.¹¹⁰ These factors, known as the Georgia Pacific factors, were adopted by the United States Court of Federal Claims in a 1993 decision under section 1498,¹¹¹ and this court has routinely applied them ever since. The factors constitute "[a] comprehensive list of evidentiary facts relevant, in general, to the determination of the amount of reasonable royalty for a patent license... drawn from a conspectus of the leading cases," and they include:

- (1) current, established royalty rates under the patent at issue;
- (2) royalty rates paid for use of comparable technology;
- (3) scope, exclusivity, and restrictiveness of a retroactive license;
- (4) the patent holder's established licensing and marketing practices;
- (5) commercial/competitive relationship of licensor and licensee;
- (6) derivative/convoyed sales of unpatented, accompanying materials by patentee and competitors, i.e., effect on sales of other products;
- (7) Duration of patent and license terms;
- (8) profitability and commercial success of invention;
- (9) utility and advantages of invention over prior art;
- (10) nature, character, and benefits of use;
- (11) extent and value of infringing use;
- (12) allocation of a portion of profits or sales price for use of invention;
- (13) portion of realizable profits creditable to the invention alone, and not to improvements by others;
- (14) expert testimony on royalty rates; and
- (15) [the totality of other intangibles impacting a hypothetical negotiation between a willing licensor and licensee.] Amount that

¹⁰⁷ See e.g., *Tektronix, Inc. v. United States*, 552 F.2d 343, 349 (Ct. Cl. 1977), cert. denied, 439 U.S. 1048 (1978).

¹⁰⁸ See *id.*

¹⁰⁹ *Id.*

¹¹⁰ [cite]

¹¹¹ [cite]

reasonable licensor and licensee would have set at the time infringing use began if they had really tried to reach agreement.¹¹²

The first problem in applying this methodology is to determine the Royalty Base. Here plaintiff can try to show that the patented article is functionally integrated into other unpatented articles, which it would have sold as a single functional unit. If successful, this tactic will yield a much higher base for the royalty.

However, this type of claim is hard to prove. For example, in a recent case concerning a patent on “a rocket-deployed explosive net” for use by the Navy for clearing mines offshore, the court rejected plaintiff’s claim to numerous other components of the Navy’s final product because they had been added by the Navy and did not function as a unit.¹¹³

Plaintiff may also try to claim “Research, Testing, Development and Exploration” costs as part of its royalty base. However, in military research, the government often bears these R&D costs, as was true in the mine-clearing case, and the Court of Federal Claims will then exclude this contribution from the royalty base.¹¹⁴

Once the royalty base has been established, the court must find an indicative royalty rate—“what the parties would have agreed to in a hypothetical negotiation.”¹¹⁵ The Court of Federal Claim’s preferred strategy is to determine a baseline rate, and then adjust upwards or downwards as the Georgia Pacific factors are applied. For example, in the mine-clearing net case, plaintiff had initially proposed a 5% royalty plus an up front fee of \$1.3-1.8 million, on a broad royalty base. The government had proposed a 4% rate on a smaller base, plus \$50,000 up front.

Here, there was no evidence of customary royalty rates in the field, which would otherwise count for a lot.¹¹⁶ The court narrowed the base, and applied a starting rate of 4.5%. Then it worked through the fifteen Georgia Pacific factors—some favorable to plaintiff, some unfavorable. In the end, plaintiff was awarded 4.5% on a narrow base limited to his 18 units (about \$5 million)

¹¹² James E. Wright v. United States, S. 53 Fed Cl. 466 (2002) (reasonable royalty to be based either on evidence of comparable deals in the private sector or more usually based on “hypothetical negotiations between willing licensor and licensee” who know all the factors bearing on the license).

which yielded some \$220,000, plus an upfront payment of an additional \$250,000 (reduced because plaintiff's invention was untested at the time he offered it to the Navy). Plaintiff's total compensation thus amounted to about \$470,000.

Generally speaking, until 1992, a 6% royalty rate was commonly applied, and awards reportedly never exceeded 10%. Since 1993, when the fifteen Georgia Pacific factors were first applied, there has been an upward trend. While we do not know what the average is, some rates falling in the range of 10-17% have been reported. The government never proposes more than a 5% base royalty.

One factor behind this trend may be a tendency of some courts to add on for cost savings and even lost profits under cover of the Georgia Pacific factors. If so, the current chief judge of the Court of Federal Claims may be less inclined to generosity on these counts in the future, as he has stressed the primary importance of a hypothetical licensing transaction.

In the mine-clearing net case, the plaintiff took eleven years to obtain a final judgment. The Court added Treasury bill interest, compounded, which gave a total of \$755,000—i.e., about \$300,000 more in interest for delay.

D. GOVERNMENT USE BEYOND SECTION 1498

In addition to the provisions of section 1498, government use of patented inventions is also specifically authorized under other statutes, such as the Tennessee Valley Authority Act¹¹⁷ and the Atomic Energy Act of 1954.¹¹⁸ Other administrative agencies and departments also possess specific statutory authorization to make use of patented inventions, including the Department of Health and Human Services, the Department of the Interior, the Department of Defense, the Department of Energy, the Department of State, the National Aeronautical and Space Administration ("NASA"), and the Environmental Protection Agency.¹¹⁹ Any agency or department that lacks specific statutory authorization may attempt to fall back upon the general provision of section 1498, in order to authorize the governmental use in question.¹²⁰

¹¹³ [Wright· at 4] 'No related component or devices'.

¹¹⁴ Wright· at 5-6.

¹¹⁵ Id· at 6.

¹¹⁶ Wright· at 8.

While the United States has logically made extensive use of its section 1498 powers to take patents bearing on defense and national security matters,¹²¹ its powers under the Tennessee Valley Authority Act resemble those that developing countries might find of particular interest in economic development strategies. The Tennessee Valley rural irrigation and electrification scheme was conceived and implemented during the Great Depression years as a massive Federal effort to develop the basic economic infrastructure of one of the very poorest regions in the country. The Tennessee Valley Authority (“TVA”), a public corporation established in 1933, is concerned with the production of fertilizer and the provision of hydroelectric power in the Tennessee Valley region,¹²² and it continues to manage the relevant assets. The TVA’s official mandate, from its inception, was to “maintain...and operat[e]...the properties now owned by the United States in the ...[Tennessee Valley], in the interest of national defense and for agricultural and industrial development, and to improve navigation... and to control the destructive flood waters in the Tennessee River and Mississippi Basins...”¹²³

Section 831r of the TVA Act provides that the Authority “as an instrumentality and agency of the Government of the United States...shall have access to the Patent Office of the United States for the purpose of studying, ascertaining, and copying all methods, formulae, and scientific information...necessary to enable the Corporation to use and employ the most efficacious and economical process” for the production of fertilizer, “or any method of improving and cheapening the production of hydroelectric power.”¹²⁴ The Act further provides that any patent holder whose patent is in “any way copied, used, infringed, or employed” by the TVA for these purposes may seek to recover “reasonable compensation for such infringement” as his exclusive remedy by filing a claim in the appropriate federal district court.¹²⁵

In *Alco Standard Corp. v. Tennessee Valley Authority*,¹²⁶ a patent holder filed a suit alleging that the TVA had infringed patents pertaining to an ultrasonic

¹¹⁷ Act of 18 May 1933, ch. 32, §19, 48 Stat. 68 (codified as amended at 16 U.S.C. §831r (2002)).

¹¹⁸ Act of 30 Aug. 1954, ch. 1073, Title I, Ch. 13, §151, 68 Stat. 943 (codified as amended through 1999 at 42 U.S.C. §2181 (2002)) (“Inventions relating to atomic weapons: and filing of reports”).

¹¹⁹ See generally Lavenue, supra note, at 436 n. 271.

¹²⁰ See Lavenue, supra note, at 436-37.

¹²¹ See infra text accompanying notes 151-165.

bore inspection system used to detect flaws in large turbine rotors to be installed in electric power generating facilities. Alco argued that the TVA Act did not authorize the Authority to take patents for any purpose other than the provisions of hydroelectric power and fertilizers. Because its patented inventions were used in steam generating facilities, Alco claimed they fell outside the statute.

The district court held that Congress intended to grant the TVA broad authority “to use patented technology and equipment, although there was a failure to express such intent clearly on the face of the statute.”¹²⁷ The court quoted some revealing language about the nature of government use from the House of Representatives Report on the bill that became the Tennessee Valley Authority Act:

Much hysterical opposition has been expressed for several years to this [government use] feature of the bill. It is recklessly charged that it authorizes the confiscation and invasion of private property rights. Such argument entirely overlooks the fundamental principles involved. The monopoly of a patent right is a special privilege conferred by the Government. The inventor has no such monopoly by the law of nature, nor by the common law, but the Constitution of the United States authorizes Congress to encourage inventions and discoveries by giving, for a limited period, a monopoly to the inventor or discoverer. But it has always been held by Congress and the courts that the sovereign which confers to one citizen such exclusive right, as against all other citizens, itself has certain rights in the monopoly privilege. It would be a strange situation for a government to confer such right of monopoly, and then, in the hour of the government’s necessity, find itself held at bay by the monopolist. This reservation of right to the Government is analogous to the right of eminent domain. It is inherent in sovereignty itself.¹²⁸

¹²² See *EINHORN*, supra, at §1.07[1]

¹²³ Tennessee Valley Authority Act, 16 U.S.C. §831 (2002) (emphasis supplied).

¹²⁴ 16 U.S.C. §831r (2002).

¹²⁵ See id.

¹²⁶ 448 F. Supp. 1175 (W.D. Tenn. 1978).

The court concluded that Congressional intent in the adoption of the legislation was to provide the “TVA a right to use patented inventions equal in scope to the right then enjoyed by other agencies of the federal government, and to provide compensation to the patent holder equivalent” to the reasonable and entire compensation available to patent holders whose inventions are used by the government under section 1498.¹²⁹

E. EVALUATION OF GOVERNMENT USE CASES

Most of the case law concerning section 1498 predictably concerns the determination of compensation for the government’s use of particular inventions, and limitations of space preclude a detailed review of those cases here. Efforts to gauge the overall incidence of this provision are complicated by certain technical difficulties,¹³⁰ and by the fact that some patent holders may secure administrative relief while others may acquiesce in a settlement figure and choose not to file for compensation. All of this results in an incomplete public record.

1. IMPACT ON PATENTEES

Nevertheless, an authoritative study conducted by Lionel M. Lavenue in 1994 found that the various claims tribunals had cumulatively resolved about 279 government use cases between 1917 and the first quarter of 1994.¹³¹ Of these, some 240 cases had arisen under section 1498 alone, which Congress adopted in 1948 to replace previous government use provisions.¹³² Once section 1498 was enacted, in other words, Lavenue found that the relevant tribunal- then the Court of Claims- “experienced a virtual explosion of the number of reported cases.”¹³³ A rough survey of reported cases from 1994 to mid-2002 yielded about 32 additional items, or an average of about four a year.¹³⁴

However, these figures tell only part of the story. For example, Lavenue reports that between 1982 and 1994, a plaintiff patentee suing for compensation under section 1498 had little better than a one in three chance of success. If these figures are adjusted to exclude cases decided on largely irrelevant issues, the win ratio could reportedly fall to as low as one in four during the same

¹²⁷ *Alco Standard Corp. v. Tennessee Valley Authority*, 448 F. Supp. 1175, 1178 (W.D. Tenn. 1978)

¹²⁸ See *Alco Standard Corp.*, 448 F. Supp. at 1179.

¹²⁹ See *Alco Standard Corp.*, 448 F. Supp. at 1179.

¹³⁰ See Lavenue, *supra* note 1153, at 492 n. 558.

period.¹³⁵ Patentees who fail to obtain compensation for government use under section 1498 are entitled to no other benefits under the statute.¹³⁶ The reported cases also omit settlements.

Those plaintiffs who succeed, however, may collect large and sometimes staggering sums of money. For example, the protracted litigation concerning the government's use of Hughes Aircraft's patents on space vehicle stabilization technology resulted in a 1% royalty computed on base of \$3.577 billion.¹³⁷ Because the litigation lasted some twenty years, moreover, the court added delay compensation averaging more than 7.5% interest a year, compounded annually, for the period 1973-1980, and about 2% annual interest, compounded daily, for the period 1980-1996.¹³⁸ In other recent cases, royalty rates have ranged from 5% to 16% depending on the facts.¹³⁹

Of course, there is no reliable or objective way to measure and compare the figures that these prevailing plaintiffs might have earned in the open market, and the reported awards should be adjusted to reflect litigation and attorneys' costs, which are normally not recoverable.¹⁴⁰ Nevertheless, one should not automatically assume that any given successful plaintiff or any given industrial sectors were necessarily worse off under section 1498 than they would have been if allowed to enforce their exclusive rights.

For one thing, until the late 1950s, contributing a patented invention to a government project usually fostered a preference for awarding the contract to the patent holder even if its bid was not the most competitive. Any estimate of effective compensation in that period should thus reflect both the value of such a preference and the extent to which the costs of patent infringement were folded into the government contract.¹⁴¹

¹³¹ See Lavenue, *supra* note 1153, at 492.

¹³² See *id.* at 494-95 (noting 240 reported cases since 1949). Congress replaced 35 U.S.C. §68 with 28 U.S.C. §1498 in 1948. See *id.*

¹³³ See Lavenue, *supra*, at 494, 496 n.563 (noting an average of about five and one-half reported cases a year after 1949).

¹³⁴ For this survey, a different database was used from that which Lavenue employed in 1994, and though the same case may have been reported several times on different issues, it was counted only once. Hence, any apparent decline (see *supra* note 1343) might be statistically insignificant.

¹³⁵ Lavenue, *supra*, at 501-02, 502 n.576.

Even after the 1960s, when such preferences were formally abrogated,¹⁴² the government itself will often have been a primary market for the invention in question, especially in matters pertaining to national defense, which account for the bulk of the reported cases. That disputes over compensation sometimes arose may simply reflect different views of the value of the invention, differences that were unresolved in the agreed contract price. If many plaintiffs lose out in section 1498 cases, this partly reflects judicial skepticism about the validity of the patents in question or the extent to which otherwise valid claims in patented inventions had actually been infringed.¹⁴³ By the same token, once the Court of Federal Claims decided to adopt the Federal Circuit's more comprehensive criteria for ascertaining reasonable royalties even in section 1498 cases,² the percentage royalties actually awarded to prevailing plaintiffs seem to have risen.¹⁴⁵

One should also consider the possible pro-competitive effects of section 1498 itself, which frees potential bidders on complex government contracts from some of the Research & the government's access to the relevant technology. Conversely, the government knows that at the end of the day, it will have to compensate all those owning patents used on any given project.¹⁴⁶

The availability of section 1498 thus operates to ensure maximum stability of supply and to immunize suppliers from third-party patent infringement suits.¹⁴⁷ It nonetheless requires government contracts officers to skillfully integrate the costs of paying those who develop new technology with the costs of compensating those whose technology is "borrowed" for the purpose

¹³⁶ See *id.* at 500.

¹³⁷ See *Hughes Aircraft Co. v. United States*, 86 F.3d 1566, 1569 (Fed. Cir. 1996). There are twelve court decisions related to this claim.

¹³⁸ See *Hughes Aircraft Co. v. United States*, 86 F.3d 1566, 1570-71 (Fed. Cir. 1996) (citing *Tektronix, Inc. v. United States*, 552 F.2d 343 (Ct. Cl. 1977)), see also *Miller v. United States*, 620 F.2d 812 (Ct. Cl. 1980); *Bendix Corp. v. United States*, 676 F.2d 606 (Ct. Cl. 1982).

¹³⁹ See, e.g., *De Graffenried v. United States*, 25 Cl. Ct. 209 (1992) (up front payment of \$50,000 plus 5% royalty on each lathe delivered under the contract); *Gargoyles, Inc. v. United States*, 113 F.3d 1572 (Fed. Cir. 1997) (awarding royalty rate of 10% on bulk of infringing articles and 50% on small portion of government contract representing development phase); *Standard Mfg. Co. v. United States*, 42 Fed. Cl. 748 (1999) (awarding 16.31% royalty rate). See also *Dow Chemical Co. v. United States*, 36 Fed. Cl. 15 (1996), *rev'd in part on other grounds*, 226 F.3d 1334 (Fed. Cir. 2001) (increasing amount of award to account for importance of the patent).

at hand.¹⁴⁸ In this respect, section 1498 provides government procurement officers with the possibility of converting exclusive property rights to liability rules as and when the situation so requires, and the use of this tool merits further study in this light.¹⁴⁹ A logical hypothesis to verify, for example, is that, while some patent holders may obtain less revenue from their inventions than might have been possible if they could enforce their exclusive rights, others may gain more by dint of unexpected uses by third parties who would not otherwise have been licensed for such uses.¹⁵⁰

2. THE PUBLIC GOOD PERSPECTIVE

Viewed from the perspective of government rather than that of private property owners, section 1498 and its progeny look like an unmitigated success. If one considers only the application of a “government use” provision to defense and national security projects, which continue to account for the bulk of the reported cases, the record speaks for itself. It begins in 1911, when the United States took patents for “guns and gun carriages for the Army,”¹⁵¹ and moves up to encompass patents on the howitzer gun,¹⁵² as well as patents pertaining to wireless transmitters and receivers and the Marconi patent on radio receiving circuits, all during the period of the first World War.¹⁵³ In the private sector, commercial exploitation of the Marconi patents had been delayed for years owing to the inability of would-be improvers to negotiate licenses with the owners of a pioneer patent.¹⁵⁴ In the 1940s, the Navy exploited the rights to a certain hydroplane boat for the entire life of the patent,¹⁵⁵ while the Air Force made use of a patented airplane canopy device,¹⁵⁶ of patented alloys in jet engines,¹⁵⁷ and in the 1960s, of certain anti-G suits and valves.¹⁵⁸ Also in the 1960s, patented helicopter models,¹⁵⁹ submarine pipeline valves,¹⁶⁰ and

¹⁴⁰ See 28 U.S.C. §1498(a) (allowing costs and attorneys’ fees only to “independent inventors,” small business concerns (under 500 employees), and nonprofit entities (such as universities)).

¹⁴¹ See *supra*.

¹⁴² See *supra* note ---

¹⁴³ See, e.g., *Zacharin v. United States*, 43 Fed. Cl. 185 (1999) (patent invalid under on sale bar defense); *Executors of the Estate of Wicker v. United States*, 43 Fed. Cl. 172 (1999) (patents invalid for obviousness under 35 U.S.C. §103).

¹⁴⁴ See *supra* note --- and accompanying text (discussing *Penda Corp. v. United States*, 29 Fed. Cl. 533 (1993)).

¹⁴⁵ See, e.g., *Dow Chemical Co. v. United States*, 36 Fed. Cl. 15 (1996), *rev’d in part on other grounds*, 226 F.3d 1334 (Fed. Cir. 2000); *supra*.

a radio navigation system¹⁶¹ were taken for military purposes. More recent cases dealt with radar beacon technology,¹⁶² laser eye wear,¹⁶³ guided missile technology,¹⁶⁴ and “aerial weapons handling trailers used to load weapons into bombers.”¹⁶⁵

Defense was not the only concern in this period, however. One case that had both civilian and military implications and that dragged on for years concerned an apparatus for controlling the orientation of the spin axis in spin-stabilized space vehicles, including satellites.¹⁶⁶ Environmental concerns appeared in later cases dealing with a water treatment apparatus,¹⁶⁷ with reinforced concrete revetment used to protect rivers from erosion,¹⁶⁸ and with a method of filling abandoned mines to prevent the collapse of overlying land.¹⁶⁹ Another recent case concerned the Federal Aviation Administration’s (FAA) use of a radar beacon system as part of an air traffic control system.¹⁷⁰

This rough survey has so far ignored the very high profile defense matters pertaining to atomic energy, which are normally covered under specialized statutes not discussed in this paper. At the other end of the spectrum lies government use of patents for relatively mundane purposes, such as the Postal Service’s use of a patented pallet for bulk mail loading,¹⁷¹ and of certain automated mail sorting technology.¹⁷² Between these two extremes, one finds the interesting use of at least one patented invention for economic development purposes under the Tennessee Valley Authority Act.¹⁷³

What has been omitted from this picture, but which palpably influences any overall assessment of section 1498, is the frequency with which the

¹⁴⁶ Cf. Lavenue, *supra* note 1153, at 437-52 (“Regulatory Inducement of Patent Infringement”).

¹⁴⁷ See, e.g., *TVI Energy Corp. v. Blane*, 806 F.2d 1057, 1060 (Fed. Cir. 1986), overruled by *Manville Sales Corp. v. Paramount Sys., Inc.*, 917 F.2d 544 (Fed. Cir. 1990) (government may expressly or impliedly authorize patent infringement under the terms of a government contract or in preparation for bidding on a government contract); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 842 F.2d 1275 (Fed. Cir. 1988) (noting that §1498 “automatically” authorizes infringement of any patent within the context of government procurement even in the face of an injunction).

¹⁴⁸ See generally Lavenue, *supra*, at 437-52.

¹⁴⁹ See, e.g., Reichman, *Green Tulips*, (2003) (advocating liability rules to facilitate improvements on small-scale innovation); see also *Merges, Contracting into Liability Rules*, *supra* note .

¹⁵⁰ See, e.g., Reichman, *supra* note 149, at 1794-96 (discussing potential lottery effects of liability rules).

government and the affected patentees negotiated settlements without resort to litigation. Equally important is the government's power to indirectly regulate the patentees' prices by the mere threat of subjecting patented inventions to governmental use under section 1498. The most clamorous illustration of this power occurred in the very recent Cipro case, which arose during a panic triggered by still unknown terrorists, who disseminated anthrax spores in the wake of other attacks on September 11, 2002.

In this period, concern mounted about the availability to Ciproflaxin, which was the only medication with FDA approval for the treatment of anthrax. The medicine was subject to patent protection until at least December of 2003, with the patent held by Bayer Corporation. As of October 2001, at least five generic manufacturers had secured tentative approval to manufacture Cipro, although the existence of the Bayer patent had prevented these companies from proceeding with manufacture of a generic alternative.¹⁷⁴ Bayer was also under investigation by the FTC in connection with a settlement payment in excess of \$200 million that it made to Barr Laboratories in exchange for an agreement to drop a suit challenging the validity of Bayer's Cipro patent.¹⁷⁵

The United States Government began to express concern over potential shortages, which culminated in the Secretary of Health and Human Services issuing a threat to "break the patent" if Bayer did not comply with the government's demand for a more reasonable price in connection with the procurement of a stockpile of the medicine.¹⁷⁶ Presumably, the United States could have proceeded under section 1498(a), as it did in 1962, when it used

¹⁵¹ See *Crozier v. Fried. Krupp Aktiengesell. Shaft*, 224 U.S. 290 (1911).

¹⁵² See *Olsson v. United States*, 87 Ct. Cl. 642 (1938) (holding that the patent owner was entitled to the fair and reasonable value of the license appropriated by the government and not just the value of the taking to the government¹).

¹⁵³ See *Marconi Wireless Telephone Co. of America v. United States*, 99 Ct. Cl. 1 (1942) (awarding compensation based on cost savings to the government for use of the Marconi patent from July 1910 to Nov. 1919, and a 10% royalty on the market value of the Lodge patent from 1913 to 1915, plus delay compensation at 5% a year²). See also *Waite v. United States*, 69 Ct. Cl. 153 (1930) (components of x-ray units for Army³); *Waite v. United States*, 282 U.S. 508 (1931) (attaining recovery below and adding delay interest to make compensation "entire"⁴).

¹⁵⁴ See *Merges, Blocking Patents*, at 84-89.

this same provision to procure a cheaper, imported generic version of the drug Milltown for use by the armed forces and the Veterans Administration.¹⁷⁷

If the government were to proceed under section 1498, one well-known expert, Al Engelberg, suggests that Bayer would likely have argued that section 1498 does not apply to generic drug purchases because a mere applicant for FDA approval is not yet a legitimate competitor for a government contract, and the generic manufacturer accordingly lacks the “authorization and consent” from the government that is a prerequisite to the invocation of this provision.¹⁷⁸ Yet, Engelberg points out that the Federal Circuit Court of Appeals rejected a similar argument in *TVI Energy Corp. v. Blane*,¹⁷⁹ when it found that section 1498 does protect government procurement activities, that authorization and consent can be implied, and that it need not be expressly stated by the government.¹⁸⁰

As noted, the United States has used section 1498 in the past to procure a cheaper generic version of a patented medicine. In *Carter-Wallace Inc. v. United States*,¹⁸¹ the military sought to make use of a medicine that implicated four patent claims held by Carter-Wallace. In 1967, the Veterans Administration (VA) began to make use of the medication Meprobamate that was subject to the Carter-Wallace patent. The VA’s decision to use this patent was taken in reaction to an allegedly abusive pricing scheme, which had made the price in the United States some 2000% higher than the price of an alternative form

¹⁵⁵ See *Fauber v. United States*, 81 F. Supp. 218 (Ct. Cl. 1948).

¹⁵⁶ See *Saulnier v. United States*, 314 F.2d 950 (Ct. Cl. 1963).

¹⁵⁷ See *Rolls-Royce Ltd. v. United States*, 364 F.2d 415 (Ct. Cl. 1966).

¹⁵⁸ See *Coakwell v. United States*, 372 F.2d 508 (Ct. Cl. 1967); see also *Calhoun v. United States*, 453 F.2d 1385 (Ct. Cl. 1972) (‘O-Rings used to prevent fluid leakage’).

¹⁵⁹ See *Pitcairn v. United States*, 547 F.2d 1106 (Ct. Cl. 1976).

¹⁶⁰ See *Jamesbury Corp. v. United States*, 207 U.S.P.Q. (BNA) 131 (Ct. Cl. 1980).

¹⁶¹ See *Decca Ltd. v. United States*, 640 F.2d 1156 (Ct. Cl. 1980).

¹⁶² See *Motorola Inc. v. United States*, 729 F.2d 765 (Fed. Cir. 1984); see also *Bendix Corp. v. United States*, 676 F.2d 606 (Ct. Cl. 1982) (‘fuel metering control system used in jet aircraft’).

¹⁶³ See *Gargoyles Inc. v. United States*, 113 F.3d 1572 (Fed. Cir. 1997); see also *Rockwell Int’l Inc. v. United States*, 31 Fed. Cl. 536 (1994) (‘night vision equipment’).

available in Denmark.¹⁸² The government opted to purchase the Danish version and paid Carter-Wallace a modest royalty for the use, but the patent holder eventually filed suit in the Court of Claims to recover “reasonable and entire compensation.” This claim proved unsuccessful, however, because the patent was found to be unenforceable due to violations of sections 1 and 2 of the Sherman Act, and because it was misuse to extend the monopoly beyond the scope of the patent.¹⁸³

3. LESSONS FOR DEVELOPING COUNTRIES

From the perspective of the developing countries, the United States experience under its government use provision would seem particularly instructive. Any sovereign state can invoke the same rationale to justify breaking a patentee’s exclusive rights when it promotes government action on behalf of any public purpose that government deems sufficiently important; and it can draft the enabling legislation to immunize contractors and agents who assist the government in achieving its goals from third-party infringement actions.¹⁸⁴ If the United States has used this tool primarily to promote stable and reasonably priced procurement for its defense industries, nothing impedes developing countries or least developed countries from applying similar tools to address other concerns of vital importance to them, such as health and welfare, or major economic development projects analogous to the Tennessee Valley project in the United States.¹⁸⁵

¹⁸⁴ See *Fike Corp. v. United States*, 41 Fed. Cl. 776 (1998).

¹⁸⁵ See *Standard Mfg. Co. v. United States*, 42 Fed. Cl. 748 (1999).

¹⁸⁶ See *Hughes Aircraft Co. v. United States*, 86 F.3d 1566 (Fed. Cir. 1996).

¹⁸⁷ See *Chemical Separation Technology, Inc. v. United States*, 51 Fed. Cl. 771 (2002) (‘compensation has yet to be awarded in this case’).

¹⁸⁸ See *Shearer v. United States*, 101 Ct. Cl. 196 (1944).

¹⁸⁹ See *Dow Chemical Co. v. United States*, 36 Fed. Cl. 15 (1996), rev’d in part on other grounds, 226 F.3d 1334 (Fed. Cir. 2000).

¹⁹⁰ See *Hazeltine Corp. v. United States*, 820 F.2d 1190 (Fed. Cir. 1987) (‘patent holder was denied compensation because invention was reduced to practice during a government contract’).

¹⁹¹ See *Penda Corp. v. United States*, 29 Fed. Cl. 533 (1993).

¹⁹² See *Symorex, Inc. v. Siemens Indus. Automation*, Case No. 99-71803, 1999 U.S. Dist. LEXIS 15924 (E.D. Mich. 1 Oct. 1999) (‘denying patent holder injunctive relief to stop patent infringement by a government

No private company, however strong, can withstand the eminent domain power of sovereign states, whether applied unilaterally by a single government, or on a regional basis to promote joint action by countries participating in a common public-good undertaking.¹⁸⁶ As indicated above, moreover, even the eminent domain theory may be sidestepped by the alternative rationale that prevailed for a time in the United States Court of Federal Claims, which then viewed “government use” as the exercise of an inherent right that was never part of the bundle of rights conferred on patentees in the first place.¹⁸⁷

Whatever the logic employed, the question that governments must resolve is not whether they possess the power to override the patentee’s exclusive rights in the name of government use (always assuming, in the case of foreign patentees, that the parameters of the TRIPS Agreement have been observed),¹⁸⁸ but when such action is to be preferred to the operations of the open market. Once governments decide to wield these powers, moreover, the end result will depend on the skill with which it is wielded and the relative costs and benefits of operating through the public rather than the private sectors.

The evidence shows that selective use of patents for specific governmental purposes can be effective without incurring unacceptably high social costs, especially when aggrieved patentees are assuaged by compensation that is both “reasonable and entire.”¹⁸⁹ Neither the defense industries in general, nor the atomic energy sector in particular, seem to have languished in the United States merely because private investment strategies are often influenced by the threat, or actual imposition, of liability rules that override exclusive property

¹⁷⁴ See Engelberg, *supra*.

¹⁷⁵ See *id.* The FTC is apparently investigating the payment to Barr, as well as other possible antitrust violations by Bayer. Additionally, several class action antitrust cases have been commenced on behalf of consumers. See *id.*

¹⁷⁶ See Striking a Balance on Patent Rights, INT’L HERALD TRIB., 30 Oct. 2001, available at <<http://www.ihrt.com/cgi-bin/generic.cgi?template=articleprint:tmplh&articleid=37323>>.

¹⁷⁷ See *Carter-Wallace, Inc. v. United States*, 196 Ct. Cl. 35 (Ct. Cl. 1971) (action brought by the patent holder to obtain reasonable compensation for the government’s use of the patented medication).

¹⁷⁸ See Engelberg, *supra*; *supra* text accompanying notes ____.

¹⁷⁹ 806 F.2d 1057 (Fed. Cir. 1986).

¹⁸⁰ See Engelberg, *supra*.

¹⁸¹ 204 Ct. Cl. 341 (1974).

rights. Naturally, there are always nagging doubts that the outcome of any given project might have been even better or more efficiently achieved in the absence of compulsory licensing. But the economic logic of public goods is still imperfectly understood, and the very concept of “efficiency” may require further refinement in this context, where governments are necessarily driven by public interest concerns that play no part in private investment strategies.¹⁹⁰ It is consoling that one study by a credible economist has found that compulsory licensing for purposes of antitrust violations, at least, had produced no adverse economic consequences in the past.¹⁹¹

However, states considering action under a government use provision must beware of numerous pitfalls that could thwart the success of any given undertaking. First and foremost, developing countries should vigorously abstain from treating government use as a covert tool for transferring rights from one set of owners, whose title derives from the patentees, to another, extraneous set of private operators. While such transfers remain possible under the “public interest” rationale discussed above,¹⁹² provided that slightly more stringent requirements of the TRIPS Agreement are observed,¹⁹³ the economic and political consequences may differ significantly from those that attend applications of a government use rationale. Here, in particular, the possible detrimental impact of such transfers on future investment, innovation, and access to advanced technology must be carefully weighed, especially with regard to the possibility that long-term losses may outweigh any short-term gains that could accrue from broader nonvoluntary licensing strategies.¹⁹⁴

Second, the exercise of a “government use” provision should be confined to activities that are sensibly undertaken by the public sector in any given country, and only after a determination that the private sector operating under open

¹⁸² See Donald G. McNeil, *NEW YORK TIMES*, 17 Oct. 2001, available at <<http://www.nytimes.com/2001/10/17/health/policy/17ETHI.html>>. The patented Carter-Wallace product cost \$34.25 for 500 capsules, while a Danish company produced the same quantity of pills for a mere \$1.55. However, there was a difference between the two drugs in that the patented medication was a long-acting formula.

¹⁸³ See *Carter-Wallace, Inc. v. Davis-Edwards Pharmacal Corp.*, 341 F. Supp. 1303 (E.D.N.Y. 1972).

¹⁸⁴ See TRIPS Agreement, *supra* note 2, art. 31(b).

¹⁸⁵ See *supra* notes and accompanying text.

¹⁸⁶ See e.g., Reichman, *Patents and Public Health in Developing Countries*, *supra*.

¹⁸⁷ See *supra* text accompanying notes 184-186.

market conditions could not meet the needs in question without resort to the nonvoluntary licensing of patented inventions. In other words, “government use” should not be employed to disguise needless regulation of, or interference with, the normal operations of the market place. In particular, states should not invoke “government use” as a substitute for an effective competition policy merely because the former is relatively easier to understand than the intricate economic analyses that necessarily accompany applications of the latter. If a “government use” provision is overused or over-extended in scope, it will certainly deter foreign investors and licensing, and it may deter local investors and innovators as well. Agencies that invoke a government use provision should therefore know what the likely social costs will be, and they should take such action only if the government is prepared to pay those costs.

Experience suggests, moreover, that governments seeking to emulate the United States’ resort to section 1498 should be prepared to hear protests from disgruntled and more powerful governments on behalf of the aggrieved foreign patentees,¹⁹⁵ except perhaps in cases where the goal is access to essential medicines.¹⁹⁶ Such protests are groundless in law and, when accompanied by threats of economic sanctions, may be illegal under article 23.1 of the Understanding on Rules and Procedures Governing the Settlement of Disputes.¹⁹⁷ Single governments and regional caucuses should accordingly

¹⁸⁸ See TRIPS Agreement, art. 31.

¹⁸⁹ Cf., e.g., Joseph E. Stiglitz; Peter R. Orzag & Jonathan Orzag, “The Role of Government in a Digital Age,” Computer and Communications Industry Association, Washington, D.C. (2000); see also Dana G. Dalrymple, “International Agricultural Research as a Global Public Good,” USAID, unpublished manuscript (2002).

¹⁹⁰ See generally Keith E. Maskus and Jerome H. Reichman, *The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods*, in *INTERNATIONAL PUBLIC GOODS AND TRANSFER OF TECHNOLOGY UNDER A GLOBALIZED INTELLECTUAL PROPERTY REGIME* 3-45 (KE Maskus & JH Reichman eds., Cambridge U. Press, 2005).

¹⁹¹ See Scherer, *supra* note 173.

¹⁹² See *supra* text accompanying notes 1083-1087.

¹⁹³ See, e.g., TRIPS Agreement, *supra* note 2, art. 31(b) (‘permitting waiver of duty to negotiate “in cases of public non-commercial use”’); see also *id.* art. 31(c) (‘apparently negating nonvoluntary licensing on “public interest” grounds “in the case of semiconductor technology”’).

¹⁹⁴ See, e.g., MASKUS, *supra* note 66, at 143-70.

be prepared to defend their rights under the WTO Agreement, and they should also consider the negotiating advantages that a government use provision may sometimes afford when “bargaining around the TRIPS Agreement” with specific foreign investors.¹⁹⁸

Finally, it is worth recalling in this context a sobering theme that has recurred throughout this study. While it remains true that a government use provision can effectively discipline patentees whose technologies are needed for vital government endeavors of all kinds, it remains equally true that the exercise of such powers is a long way from developing and implementing a well-conceived national system of innovation.¹⁹⁹ Stimulating local innovation and fostering the economic policies to support it are, or ought to be, primary goals of all developing countries. It is the adoption of sound innovation policies, and a legal framework consistent with international intellectual property law to implement them, that will ultimately determine a developing country’s long-term growth potential.²⁰⁰ The use of nonvoluntary licensing of patented inventions for any legitimate purpose may ultimately stand or fall only insofar as it advances these higher policy goals.

¹⁹⁵ See, e.g., S. SELL, *PRIVATE POWER, PUBLIC LAW*, ch.6 (“Life After TRIPS: Aggression and Opposition”); see also SUSAN K. SELL, *POWER AND IDEAS: NORTH-SOUTH POLITICS OF INTELLECTUAL PROPERTY AND ANTITRUST*, ch. 1 (1998).

¹⁹⁶ See Doha Declaration on Public Health, *supra* note 3.

¹⁹⁷ See Settlement of Disputes, *supra* note 165. Cf. United States -- Sections 301-310 of the Trade Act of 1974, Report of the Panel, WT/DS200/R (22 Dec. 1999).

¹⁹⁸ See, e.g., Reichman & Lange, *Bargaining Around the TRIPS Agreement*; Reichman, *TRIPS Agreement Comes of Age*, at 463-70.

¹⁹⁹ See generally Richard R. Nelson and Nathan Rosenberg, *Technology Innovations and National Systems*, in *NATIONAL INNOVATION SYSTEMS: A COMPARATIVE ANALYSIS* 3-21 (Richard R. Nelson, ed. 1993).

²⁰⁰ See Maskus & Reichman *supra* note 190.