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**PATENT LAW – BALANCING PROFIT MAXIMIZATION AND PUBLIC ACCESS TO
TECHNOLOGY**

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INTRODUCTION

Patents are a subset of the larger field of law known as intellectual property law. At its most basic level, intellectual property is the broad term applied to things that “spring” from a person’s mind. These can include, among other things, new drugs, new methods of doing business, computer software, a trademark or logo used to sell a product, a song, a play or a new financial product.

Early in the history of mankind it was recognized that some types of intellectual property should be granted legal protection.¹ Patent protection dates back to the 1400s in Europe.² Likewise other forms of intellectual property protection, such as trade secret law,³ copyright law⁴ and trademark law,⁵ have a long history. In modern times the United States and other developed

¹ See ROBERT P. MERGES, PATENT LAW AND POLICY 1 -13 (2nd ed. 1997) (brief overview of history of patent law); PAUL GOLDSTEIN, COPYRIGHT, PATENT, TRADEMARK AND RELATED STATE DOCTRINES 219-21 & 552-53 (4th ed. 1997) (brief overview of history of trademark and copyright law). See generally F.D. Prager, *A History of Intellectual Property from 1545 to 1787*, 26 J. PAT. OFF. SOC=Y 711 (1944). The United States Constitution grants to Congress the power A[t]o promote the Progress of Science and useful arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” This enabling language of the Constitution provides the basis for Congressional enactment of both patent and copyright laws. See DONALD S. CHISUM & MICHAEL A. JACOBS, UNDERSTANDING INTELLECTUAL PROPERTY LAW 1 ID at 1-8 (1992).

² First known patent system existed in Venice in the mid-fifteenth century. First United States patent law enacted in 1790. See GOLDSTEIN, *supra* note 1.

³ Trade secret law existed as early as the 1300s. See F.D. Prager, *The Early Growth and Influence of Intellectual Property*, 34 J. PAT. OFF. SOC=Y 106, 120-21 (1952).

⁴ Copyrights granted in Venice in 1500s. See PRAGER at 716, *supra* note 1. First United States copyright law was enacted in 1790. See GOLDSTEIN at 382 & 552, *supra* note 1.

⁵ Trademarks were used in Roman times. See JANE C. GINSBURG, JESSICA LITMAN & MARY L. KEVLIN, TRADEMARK AND UNFAIR COMPETITION LAW 83 (3rd ed. 2001).

countries have both strengthened the scope of intellectual property laws⁶ and expanded the range of subject matter covered by such laws.⁷ Additionally, international protection of intellectual property has become an objective of many nations. The recent Agreement on Trade Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods of the General Agreement on Tariffs and Trade (commonly called the TRIPS Agreement),⁸ which is overseen by the World Trade Organization (WTO), was agreed to by 117 countries.⁹ This agreement formally links the protection of intellectual property with international trade. The agreement allows member countries to enforce intellectual property rights via trade sanctions.¹⁰

⁶ For example, United States lengthened the term of protection for a copyright in 1998. The basic term was increased from life of the author plus 50 years to life plus 70 years. *See* ROBERT A. GORMAN & JANE C. GINSBURG, COPYRIGHT 343 (5th ed. 1999).

⁷ For example, computer software is covered by both United States copyright law and patent law. *See* *Central Point Software v. Nugent*, 903 F. Supp. 1057, 1060 (E.D.Tex. 1995) (beyond dispute that software copyrightable); *see* *Bateman v. Mnemonics, Inc.*, 79 F.3d 1532, 1541 n.21 (11th Cir. 1996) (certain aspects of software patentable). Recently, the Federal Circuit explicitly extended patent protection to methods of doing business. *See* *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied* 525 U.S. 1093, 119 S.Ct. 851 (1999). *See also* *Diamond v. Chakrabarty*, 447 U.S. 303, 309, 100 S.Ct. 2204, 2207-08 (1980) (Court noted that “Congress intended statutory subject matter [of patent law] to ‘include anything under the sun that is made by man.’”).

⁸ This agreement is the most comprehensive multilateral agreement on intellectual property rights agreed to in history. The agreement, which became effective on January 1, 1995, covers copyrights, trademarks, geographical indications, industrial designs, patents, integrated circuits designs, and trade secrets. *See* Sue Ann Mota, *Trips-Five Years of Disputes at the WTO*, 17 ARIZ. J. INT'L & COMP. LAW 533, 533 (2000). *See also* Overview: The TRIPS Agreement at http://www.wto.org/english/tratop_e/trips_e/intel2_e.htm (visited Sept. 14, 2001). *See* Agreement on Trade-Related Aspects of Intellectual Property Rights available at http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm (visited Sept. 14, 2001)

⁹ *See* John A. Harrelson, *TRIPS, Pharmaceutical Patents, and the HIV/AIDS Crisis: Finding the Proper Balance between Intellectual Property Rights and Compassion*, 7 WIDENER L. SYM. J. 175, 179 (2001).

¹⁰ *See id.* at 175-76.

Furthermore, it provides that the WTO will provide the forum for resolution of disputes among member nations.¹¹ The consequence of this agreement is that the economic interests of both private enterprises and developed nations may deprive developing countries of immediate access to modern technology, including pharmaceuticals. This can have a significant adverse effect on the health and well being of citizens of such countries. For example, the HIV/AIDS epidemic may continue to spread unchecked in developing nations if patented drugs are unavailable in such countries due to their cost. Achieving a solution that eliminates, or at least minimizes, this adverse impact requires an exploration of the policy reasons for the existence of intellectual property law. Likewise, this entails an examination of both the benefits and detriments to society that flow from the existence or non-existence of intellectual property law. Additionally, it requires recognition that intellectual property law, like most law, represents a balance of underlying policies or societal objectives that may often be inconsistent.¹² Finally, the balance achieved by intellectual property law must be examined to determine if a proper balance has been struck by the existing law.¹³ This paper will conclude with some concrete proposals for striking a balance between protecting intellectual property rights and minimizing deprivation of the benefits of intellectual property for developing nations. Such proposals, if implemented, can have an immediate impact on increasing the availability of patented drugs used to fight the HIV/AIDS crisis in developing nations.

¹¹ *See id.* at 175.

¹² *See Dawson Chemical Co. v. Rohm & Haas Co.*, 448 U.S. 176, 221, 100 S. Ct. 2601, 2626 (1980) (“The policy of free competition runs deep in our law. . . . But the policy of stimulating invention that underlies the entire patent system runs no less deep.”).

¹³ *See TRIPS Agreement, Article 7, supra* note 8.

I. WHAT ARE PATENT RIGHTS – PROPERTY RIGHTS OR MONOPOLIES?

Commentators and courts describe patent rights both as property¹⁴ and as monopoly¹⁵ rights. Although a label is not determinative, each of these terms is shorthand for a specific view of patents.¹⁶

A. The Monopoly Argument

Reference to a patent as a monopoly suggests that the patent owner has the ability to charge supra-competitive prices and to control marketplace supply.¹⁷ This argument flows from the rights granted by patent laws. Typically, patent laws grant the patent owner exclusive rights to prevent third parties from making, using, offering for sale, selling or importing the patented item without permission of the patent owner.¹⁸ These exclusive rights are viewed, by critics of

¹⁴ See *Florida Prepaid Postsecondary Educ. Expense Bd. v. College Savings Bank*, 527 U.S. 627, 653, 119 S. Ct. 2199, 2213 (1999) (Justice Stevens, dissenting) (patents are property).

¹⁵ See *Mettler-Toledo v. Acker*, 908 F. Supp. 240, 247 (M.D.PA. 1995) (patent is monopoly).

¹⁶ See generally Shanker A. Singham, *Competition Policy and the Stimulation of Innovation: TRIPS and the Interface Between Competition and Patent Protection in the Pharmaceutical Industry*, 26 BROOK. J. INT'L L. 363, 369-74 (2000) (discussing whether a patent is a monopoly or a property right is a fundamental issue that is often overlooked).

¹⁷ See Aaron Xavier Fellmeth, *Copyright Misuse and the Limits of the Intellectual Property Monopoly*, 6 J. INTELL. PROP. L. 1, 31-32 (1998) (patent may not provide any market power).

¹⁸ See 35 U.S.C. § 154(a)(1)(U.S. Patent law); see also TRIPS Agreement, Article 28, *supra* note 8.

intellectual property law regimes, as monopolies.¹⁹ Despite the surface appeal of this argument it fails under close analysis. The exclusive rights granted by patent law do not automatically translate into market control.²⁰ Many, if not most, products are not unique. Typically, substitutes exist so that any attempt by the patent owner to control the marketplace will result in consumers purchasing such substitute products.²¹ Examples of this exist in the pharmaceutical area for certain classes of drugs. For example, numerous drugs exist to combat clinical depression.²² If the owner of one of these patented drugs charges too high a price consumers will shift to another drug.²³

¹⁹ See Mark W. Lauroesch, *Genetic Engineering: Innovation and Risk Minimization*, 57 GEO. WASH. L. REV. 100, 101-02 (1998) (discussing arguments raised by critics of patent system in context of genetically engineering organisms).

²⁰ See 35 U.S.C. § 271(d)(5) (market power based on patent issuance not assumed in analyzing tying arrangement). See also *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505, 511 (7th Cir. 1982) (not all patents provide patent owner market power).

²¹ See *Vandenhoeck v. Commissioner*, 4 T.C. 125, 130, 1944 U.S. Tax Ct. LEXIS 47, 12 (Tax Ct. 1944) (court noted despite strong patent position in marketplace patent owner did not have monopoly due to existence of competitive products). See also Simone A. Rose, *Patent "Monopolyphobia": A Means of Extinguishing the Fountainhead?*, 49 CASE W. RES. 509, 511 (1999) ("The overwhelming majorities of patents do not confer monopoly power on the grantee, but instead stimulate free market competition by increasing the number of consumer options. Because alternatives or substitutes are frequently available for the patented product, the patentee will rarely be able to extract the type of pricing power that creates a monopoly for her product.").

²² See WILLIAM S. APPLETON, *PROZAC AND THE NEW ANTIDEPRESSANTS* at 37 (rev. ed. 2000). See also Kelly N. Reeves, *Direct-to-Consumer Broadcast Advertising: Empowering the Consumer or Manipulating a Vulnerable Population?*, 53 FOOD DRUG L.J. 661, 671 (1998) ("drug companies often compete for consumers in overcrowded therapeutic classes").

²³ Switching to a cheaper drug is facilitated by the marketplace. For example, some health insurance providers require participating physicians to choose a cheaper prescription drug, in some cases, when several equivalent drugs are available. Often the providers will be required to use a generic drug in lieu of an equivalent patented drug due to a significant price differential. Additionally, some providers will allow the patient to make the choice, but a higher co-pay must be paid by the patient for more expensive drugs than for cheaper alternatives. See generally Ryan L. Everhart, *New York Managed Care Legislation: A Substantive Response to Corporate*

In some cases, an enterprise may develop a product that is so superior that few substitute products exist.²⁴ If this product is sufficiently inventive to qualify for patent protection²⁵ the

Medicine or a Token Gesture to Ease Consumer Concerns?, 46 BUFF. L. REV. 507, 515 (1998) (some health providers require physicians to only prescribe drugs included in a list of drugs, called a formulary, provided to doctors); Kelly N. Reeves, *Direct-to-Consumer Broadcast Advertising: Empowering the Consumer or Manipulating a Vulnerable Population?*, 53 FOOD DRUG L.J. 661, 671 (1998) (“More than half of the U.S. population is covered by some form of managed drug plan, which often have restrictive drug formularies.”). *See also* Susan M. Wolf, *Physician-Assisted Suicide in the Context of Managed Care*, 35 DUQ. L. REV. 455, 472 (1996). Arguably, the marketplace provides competition among classes of drugs which creates downward price pressure and limits the market power of any individual seller. This is typically beneficial to consumers. Additionally, it promotes the development of improved drugs since the creation of an improved drug has potential to enhance market share. This also helps the public which obtains the benefits of such improvements. *See generally* APPLETON, *supra* note 22, at 48 (noting older antidepressant drugs have more side-effects than newer ones).

²⁴ Arguably, this would be an atypical situation. *See generally* U.S. v. E.I. DuPont de Nemours & Co., 351 U.S. 377, 394, 76 S. Ct. 994, 1006 (1956) (substitutes exist for most products).

²⁵ To be patentable an invention must meet several criteria. It must be new and useful. *See* 35 U.S.C. § 101. “New” is defined to mean, among other things, that prior to the invention date the invention was not previously known or used by others in the United States, or patented or described in a printed publication anywhere in the world. *See* 35 U.S.C. § 102(a). Additionally, subsequent to the invention date, an invention does not qualify for a patent if it is patented or described in a printed publication anywhere in the world more than one year after the invention date; or, it is in public use or on sale in the United States for more than one year after the date of invention. *See id.* § 102(b). The invention must also fit within a statutory category. Those categories are limited to processes, machines, manufactures, compositions of matter, or an improvement of something in these categories. *See* 35 U.S.C. § 101. Additionally, it must be non-obvious at the time of invention. *See* 35 U.S.C. § 103. This non-obvious requirement bars issuance of patents on new and useful inventions that would have been obvious to someone skilled in the relevant technology field at the time of invention. Consequently, even if an invention is new, useful and within one of the statutory categories, it may not be patentable if it is obvious. *See* *Graham v. John Deere Co.*, 383 U.S. 1, 14-19, 86 S. Ct. 684, 692-95 (1966). “[T]he nonobviousness requirement for patentability thus expresses the congressional determination that trivial advances should not be awarded with patent protection. Non-obviousness thus creates a ‘patent-free’ zone around the state of the art, allowing skilled technicians to complete routine work such as the straightforward substitution of materials, the ordinary streamlining of parts and technical processes, and the usual marginal improvements which occur as a technology matures. Only when a claimed invention surpasses this ordinary, continuous flow of technical progress will it surmount the requirement of nonobviousness.”

patent owner may have substantial market power. This is especially true if the product is a necessity such as a medicine necessary to preserve life.²⁶ Nevertheless, from an economic perspective it may be unfair to penalize an enterprise that has developed monopoly power via legitimate means. A competitive marketplace is designed to promote development of superior products.²⁷ Hence, it is inconsistent to encourage competition and then to punish an enterprise for essentially competing too effectively. Justice Hand stated in a famous antitrust decision that “[t]he successful competitor, having been urged to compete, must not be turned upon when he wins.”²⁸ United States antitrust law reflects this understanding. A company does not violate antitrust law merely because it has a sufficiently large share of the marketplace such that it is a monopoly in economic terms. A large market share can be due to a superior product or to effective marketing efforts.²⁹ A company runs afoul of antitrust law when it engages in anti-competitive conduct that is designed to maintain its dominant market position via means other than legitimate competition. This is reflected in Supreme Court decisions which typically state:

MARTIN J. ADELMAN, RANDALL R. RADER, JOHN R. THOMAS & HAROLD C. WEGNER, PATENT LAW 408 (1998).

²⁶ See BURTON, *infra* note 84 (lifesaving drug to fight infection expected to be sold for \$5000 per dose which suggests drug manufacturer has significant market power).

²⁷ See *Smith v. Northern Mich. Hospitals*, 518 F. Supp. 644, 648 (W.D. Mich. 1981) (“well settled that there is no violation of the antitrust laws if a monopoly grows or develops as a consequence of a superior product, business acumen or historical accident”).

²⁸ *U.S. v. Aluminum Co. of America*, 148 F.2d 416, 430 (2d Cir. 1945).

²⁹ See *generally* *Trixler Brokerage Co. v. Ralston Purina Co.*, 505 F.2d 1045, 1051 (9th Cir. 1974) (stating that a natural monopoly may exist for products sold under a trademark, but that this alone does not create an illegal monopoly).

The offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.³⁰

B. The Property Argument

All property owners have exclusive rights with regard to their property.³¹ This applies to real property and personal property.³² Typically, under United States law, the designation of something as property accords the owner of that property specific rights; namely, the right to exclude third parties from possessing, using or transferring the property.³³ A patent owner is granted essentially the same rights.³⁴ The Supreme Court has stated that “the essence of a patent

³⁰ U.S. v. Grinnell Corp., 384 U.S. 563, 570-01, 86 S. Ct. 1698, 1704 (1966).

³¹ This is actually an overstatement since absolute exclusive rights do not generally attach to property. Some limitations are permissible to promote order in society and to protect the public. *See generally, infra* notes 56-58 and accompanying text.

³² *See* James Boyle, *Taking Stock: The Law and Economics of Intellectual Property Rights: Cruel, Mean, or Lavish? Economic Analysis, Price Discrimination and Digital Intellectual Property*, 53 VAND. L. REV. 2007, 2017 n.20 (2000) (“Rights to exclude are not monopolies just because the property involved is an intangible rather than something you can walk across or hold in your hand.”).

³³ *See* Dolan v. City of Tigard, 512 U.S. 374, 384, 114 S. Ct. 2309, 2316 (1994) (right to exclude others from your property is one of the most essential rights attaching to property).

³⁴ *See* Alexander K. Haas, *Genome Data: The Wellcome Trust's Disclosures of Gene Sequence Data into the Public Domain & the Potential for Proprietary Rights in the Human Genome*, 16 BERKELEY TECH. L.J. 145, 153 (2001) (“a patent, like ownership of real property, provides the owner with exclusivity against other potential users of that resource”). *See also* 35 U.S.C. § 271(d)(5) (refusing to use or license patented invention not grounds to deny patent

grant is the right to exclude others from profiting by the patented invention.”³⁵ Likewise, the Federal Circuit, which is influential in patent matters, has very recently stated that it has long been settled that a patent is property.³⁶ Finally, United States patent law expressly states “patents shall have the attributes of personal property.”³⁷

Despite the exclusive rights granted to a property owner with regard to their real or personal property their property interest is not classified as a monopoly.³⁸ This is true even if the property at issue is unique.³⁹ The owner of an irreplaceable work of art painted hundreds of years ago is not considered a monopolist.⁴⁰ Nor is the owner of a key parcel of land considered a monopolist if she refuses to allow any use of the land despite any consequent negative impact on society.

owner relief for infringement by third party). *See also* Nickola v. Peterson, 580 F.2d 898, 914 n.25 (6th Cir. 1978) (“The patent right, solely that of excluding others, is the fundamental element of all human rights called ‘property.’ The statutory, and therefore proper, characterization is not ‘patent monopoly,’ but ‘patent property.’”).

³⁵ Dawson Chemical Co. v. Rohm & Haas Co., 448 U.S. 176, 215, 100 S. Ct. 2601, 2623 (1980).

³⁶ *See* Semiconductor Energy Lab. Co. v. Samsung Elecs. Co., 204 F.3d 1368, 1380 (Fed. Cir. 2000).

³⁷ 35 U.S.C. § 261.

³⁸ *See* KELVIN JONES, LAW AND ECONOMY – THE LEGAL REGULATION OF CORPORATE CAPITAL 44 (1982) (private property and a monopoly are both types of exclusive ownership).

³⁹ Real property, by its very nature, is always unique. *See* Arnold & Baker Farms v. United States, 85 F.3d 1415, 1421 (9th Cir. 1996), *cert. denied* 519 U.S. 1054, 117 S. Ct. 681 (1997).

⁴⁰ This is despite the fact that one definition of monopoly is “the exclusive possession or control of something.” *See* RANDOM HOUSE WEBSTER’S COLLEGE DICTIONARY 849 (1997).

C. Policy Considerations

The ultimate determination of whether something is granted property status is policy based.⁴¹ Typically, this issue is not raised or even considered with regard to most common types of property such as real property or tangible personal property. No one would question that a house or a car are deemed property by the law. Nevertheless, as the frontiers of science are rapidly expanded the question of whether some things should be designated property has arisen. For example, the California Supreme Court determined that body tissue removed by a surgeon was not the patient's property post removal.⁴² To understand the legal designation that something should be granted or denied property status requires an examination of the underlying reasons or policies that support granting property status.⁴³

Typically, private property is viewed, in a capitalistic economic system, as a fundamental right of individuals.⁴⁴ As society has become more highly developed individuals specialize in specific work related endeavors in return for monetary payments. Those monetary payments are

⁴¹ See *Moore v. Regents of the University of California*, 51 Cal. 3d 120, 135-36 & 143, 271 Cal. Rptr. 146, 154-55 & 160, *cert. denied*, 499 U.S. 936 (1991) (court reasoned, among other things, that body tissue removed from a patient during surgery was not the patient's property because a contrary result had the potential to interfere with research activities). See generally Radhika Rao, *Property, Privacy, and the Human Body*, 80 B.U.L. REV. 359 (2000) (asserting existence of judicial confusion over whether body parts have the status of property).

⁴² See *Moore*, 51 Cal. 3d 120.

⁴³ See generally Andrew Beckerman-Rodau, *Are Ideas Within the Traditional Definition of Property?: A Jurisprudential Analysis*, 47 ARK. L. REV. 603, 604-12 (discussing policy reasons for recognizing property rights).

⁴⁴ See generally Phyliss Craig-Taylor, *Through a Colored Looking Glass: A View of Judicial Partition, Family Land Loss, and Rule Setting*, 78 WASH. U. L.Q. 737, 763 (2000) (existence of private property essential for liberty).

then used to purchase the various goods and services needed by individuals. Likewise, property can be viewed, from an economic perspective, as a commodity⁴⁵ that is to be used to generate wealth. This can only be accomplished if the law recognizes private property rights.⁴⁶

In light of this, intellectual property can be viewed as simply another type of property.⁴⁷ This is especially true in the context of businesses where intellectual property, such as patent rights, is used by an enterprise to make a profit. From an economic perspective intellectual property rights are utilized in the same manner as an enterprise would use a diamond mine or an office building.⁴⁸ All of these assets are ultimately utilized to maximize the return on investment by a company. Maximizing the return by charging the highest price possible is not by itself objectionable nor unlawful. In a competitive marketplace competition is chiefly relied on to limit the market power of an enterprise.⁴⁹ Failing to treat intellectual property in a manner similar to

⁴⁵ See THE MIT DICTIONARY OF MODERN ECONOMICS 68 (4th ed. 1992) (commodity is defined as “[a]ny object which is produced for consumption or for exchange in markets”).

⁴⁶ See *G.S. Rasmussen & Assocs., Inc. v. Kalitta Flying Serv. Inc.*, 958 F.2d 896, 900 (9th Cir. 1992), *cert. denied*, 508 U.S. 959 (1993) (stating that “[p]rivate ownership is the principal incentive for the creation and maintenance of commodities, and for their efficient allocation.”).

⁴⁷ See generally *Vanna White v. Samsung Electronics America, Inc.*, 989 F.2d 1512, 1514 (9th Cir. 1993) (Kozinski, J., dissenting) (“Private property, including intellectual property, is essential to our way of life.”).

⁴⁸ See *Consolidated Fruit-Jar Co. v. Wright*, 94 U.S. 92, 96, 24 L. Ed. 68, 69 (1876) (“A patent for an invention is as much property as a patent for land. The right rests on the same foundation, and is surrounded and protected by the same sanctions.”).

⁴⁹ See generally Aimee M. Adler, *Competition in Telephony: Perception or Reality? Current Barriers to the Telecommunications Act of 1996*, 7 J.L. & POL'Y 571, 584 (1999) (noting, in context of telecommunications industry, lack of competition can have negative effect on economy). See also MARK S. MASSEL, *COMPETITION AND MONOPOLY – LEGAL AND ECONOMIC ISSUES* 16 (1962) (pro-competitive policies support free enterprise economic system); *Northern Pac. Ry. Co v. United States*, 356 U.S. 1, 4 (1958) (stating that “[u]nrestrained

the treatment of other property may have a radical impact on a competitive economic system.⁵⁰

This is especially true today because the major assets of many corporations are chiefly intellectual property.⁵¹

Nevertheless, totally free competition,⁵² although possible in theory, is not possible in practice.⁵³ Even in the United States, which champions a free enterprise economic system, governmental marketplace interference has been utilized in appropriate situations.⁵⁴ Furthermore, governmental limitations on private property rights have typically been allowed for the general

interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress).

⁵⁰ See generally RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 1 cmt. a (1995) (stating that “[f]reedom to engage in business and to compete for the patronage of prospective customers is a fundamental premise of the free enterprise system.”); *Eastern Wine Corp. v. Winslow-Warren, Ltd. Inc.*, 137 F.2d 955, 958 (2d Cir. 1943), *cert. denied*, 320 U.S. 758 (1943) (holding that “[t]here is a basic public policy, deep-rooted in our economy and respected by the courts, resting on the assumption that social welfare is best advanced by free competition. . .”).

⁵¹ See Lars S. Smith, *Trade Secrets in Commercial Transactions and Bankruptcy*, 40 IDEA 549, 549 (2000). Intellectual property accounts for two-thirds of the market valuation of United States corporations today. See Jenna Greene, *Patent Office at center stage*, NATIONAL L. J. at B8 (January 15, 2001).

⁵² An economist would refer to this as a “free market” which is defined as “[a] market in which there is an absence of intervention by government and where the forces of supply and demand are allowed to operate freely.” See THE MIT DICTIONARY OF MODERN ECONOMICS, *supra* note 45 at 163.

⁵³ See generally MASSEL, *supra* note 49 at 21- 22 (discussing regulation of competition to insure health and safety); Some marketplace regulation, such as setting standards, may be pro-competitive. See *id.* at 22. See also GEORGE W. STOCKING & MYRON W. WATKINS, MONOPOLY AND FREE ENTERPRISE 7 (1968) (governmental regulation must provide an appropriate legal framework within which free competition can operate).

⁵⁴ See *infra* notes 55 & 56 and accompanying text.

welfare of the populace.⁵⁵ Real property use restrictions, such as zoning ordinances and land use restrictions, are common.⁵⁶ Restrictions on the transfer of tangible personal property, such as weapons and prescription drugs, also exist.⁵⁷ Additionally, governmental agents can engage in non-permissive invasion of property rights pursuant to criminal investigations in certain circumstances.⁵⁸ Price restrictions have been utilized in some cases to address social problems. For example, rent control ordinances have been enacted in some municipalities in the United States to address the problem of a shortage of affordable low-income housing.⁵⁹ Such ordinances typically limit the maximum rent landlords can charge for private property rentals.⁶⁰ In many places, such as New York City, the ordinances result in rental fees that are significantly below marketplace rates.⁶¹ Nevertheless, such interference with both property rights and the free market

⁵⁵ For example, anti-discrimination laws prohibit discrimination on the basis of race, color, religion, sex, familial status or national origin in the sale or rental of housing. *See generally* 42 U.S.C. §§ 3601-3619 (1994) (explaining purpose of the Fair Housing Act). Additionally, Justice Mosk of the California Supreme Court stated “[f]or a variety of policy reasons, the law limits or even forbids the exercise of certain rights over certain forms of property.” *Moore*, 51 Cal. 3d at 165, 271 Cal. Rptr. at 176 (Justice Mosk, dissenting).

⁵⁶ *See id.* at 165 & n.6; 176 & n.6.

⁵⁷ *See id.* at 165 - 66 & n.7; 176 - 77 & n.7.

⁵⁸ Police officers, pursuant to a valid search warrant, can lawfully enter private property despite the owner’s objection. *See* JOHN G. SPRANKLING, UNDERSTANDING PROPERTY LAW § 1.03[B][2] (2000).

⁵⁹ *See, e.g.,* *Cromwell Assoc. v. Mayor & Council of Newark*, 511 A.2d 1273 (N.J. Super. Ct. 1985) (discussing rent control ordinance in effect in Newark). *See also* *Inganamort v. Borough of Fort Lee*, 303 A.2d 298 (N.J. 1973) (holding that municipalities can enact rent control ordinances in response to critical shortage of housing).

⁶⁰ *See* DUKEMINIER & KRIER, PROPERTY 553 (3rd ed. 1993).

⁶¹ *See generally* Alan S. Oser, *The Free-Market Rental Alternative*, N.Y. TIMES, Feb. 24, 1985, § 8 at 1.

has been upheld as lawful by the Supreme Court.⁶² It has also been historically true that governments can confiscate private property for the benefit of the public.⁶³ This is true in the United States with the only limitation being that the government is constitutionally required to provide just compensation for the value of the property taken.⁶⁴

If patents are considered property they become subject to the same potential limitations and restrictions that are applied to property generally. The underlying goals of patent law may support additional restrictions that are not typically applied to real property and tangible property.

The underlying reason for patents, in the United States, has been to benefit society.⁶⁵ Patents are viewed as a bargain between the inventor and the government.⁶⁶ Pursuant to this bargain the government grants the inventor exclusive property rights in the invention for a

⁶² See *Pennell v. City of San Jose*, 485 U.S. 1, 108 S. Ct. 849 (1988).

⁶³ See ERWIN CHEMERINSKY, *CONSTITUTIONAL LAW PRINCIPLES AND POLICIES* § 8.4.4 at 522 (1997) (stating that the Fifth Amendment of the Constitution grants government power to take private property for public use).

⁶⁴ See *id.* § 8.4.5 at 524.

⁶⁵ In *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480, 94 S. Ct. 1879, 1885-86 (1974) (“[t]he stated objective of the Constitution in granting the power to Congress to legislate in the area intellectual property is to ‘promote the Progress of Science and useful Arts.’ The patent laws promote this progress by offering a right of exclusion for a limited period as an incentive to inventors to risk the often enormous costs in terms of time, research, and development. The productive effort thereby fostered will have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens”). See also *Consolidated Fruit-Jar Co.*, 94 U.S. 92, 96, 24 L. Ed. 68, 69 (“inventors . . . add to the wealth and comfort of the community, and promote the progress of civilization”).

⁶⁶ See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150-51, 109 S. Ct. 971, 977 (1989).

limited time period.⁶⁷ Reciprocally, the inventor must fully disclose the invention to the public.⁶⁸ This disclosure must include a sufficiently detailed description of the invention such that someone skilled in the relevant technology can make and use the invention with minimum effort.⁶⁹ Additionally, the inventor must disclose the best mode of making and using the invention if the inventor is aware of more than one embodiment of the invention.⁷⁰ Traditionally, granting an economic reward to an inventor, in the form of a patent such that the inventor can maximize her economic return, has not been the fundamental goal of patent law. Rather, the economic reward represents a pragmatic realization that economic incentives are necessary to promote creative activity that ultimately inures to the benefit of the public.⁷¹ Absent the ability to reap an economic gain from an investment in research and development activities creates a disincentive to fund such activities.⁷² Arguably, a corporate decision to fund research to benefit the public absent an expectation of an economic return could be viewed as a breach of fiduciary duty by the corporate CEO or directors.⁷³ In light of this, it is consistent with the underlying policy of patent law to restrict patent rights subject only to the limitation that adequate incentives

⁶⁷ *See id.*

⁶⁸ *See id.*

⁶⁹ *See* 35 U.S.C. § 112 (first paragraph).

⁷⁰ *See id.*

⁷¹ *See* *Mazer v. Stein*, 347 U.S. 201, 219; 74 S. Ct. 460, 471 (1954).

⁷² *See* *King Instruments Corp. v. Perego*, 65 F.3d 941, 950 (Fed. Cir. 1995) (economic rewards from patent are incentive for innovation).

⁷³ *See* *Litwin v. Allen*, 25 N.Y.S.2d 667 (N.Y. Sup. Ct. 1940) (corporate directors liable for breach of fiduciary duty for entering financial transaction where no potential monetary gain possible).

exist to foster research for the betterment of society. Such a restriction on the property rights represented by a patent already exist in the form of a limited twenty year term provided by a patent.⁷⁴ Nevertheless, changes in both society and business may dictate that further limitations on patent rights may be possible without diminishing the incentive to invest in research and development. Throughout the history of United States patent law the term of a patent has been changed several times.⁷⁵ Clearly, this indicates that modifications on the scope and extent of property rights provided by a patent are not a new concept.

Differences between intellectual property and tangible property also may permit more restrictions on intellectual property as compared to tangible property.⁷⁶ The globalization of business enterprises has increased the number of potential consumers in the marketplace for products and services. This has increased the need for protection of inventions in every country in the world.⁷⁷ Correspondingly, this increased market benefits businesses that deal in intellectual property. The production of tangible goods, for example, requires a per unit expenditure for the

⁷⁴ Other restrictions on a patented invention include the ability of the United States Patent & Trademark Office to reevaluate whether an issued patent was properly issued. This process can be initiated by any person. *See* 35 U.S.C. §§ 302 & 311. Additionally, in a patent infringement action brought in federal court the alleged infringer can bring a counterclaim alleging patent invalidity. Pursuant to this the court can review the issued patent and determine whether it should or should not have been issued. *See* 35 U.S.C. § 282.

⁷⁵ *See* CHISUM, *supra* note 1, § 2B n.2 at 2-9 (first U.S. patent law granted 14 year term); *See also* ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 133 n.22 (2000) (discusses various different patent terms that have been in force in U.S.). Current U.S. term generally begins upon patent issuance but it ends twenty years from the date the patent application was filed. *See* 35 U.S.C. § 154(a)(2).

⁷⁶ *See generally* PAUL GOLDSTEIN, *COPYRIGHT, PATENT, TRADEMARK AND RELATED STATE DOCTRINES* 6-7 (Rev. 4th ed. 1999) (discussion of some differences between intellectual property and tangible property).

⁷⁷ Arguably, this is one reason for the creation and acceptance of the TRIPS Agreement. *See supra* note 8 & accompanying text for discussion of the TRIPS Agreement.

production of each additional unit of production. In economic terms there is a marginal cost⁷⁸ associated with each additional product produced. In contrast, intellectual property can be potentially licensed to an infinite number of consumers.⁷⁹ The cost to add each additional licensee is small; typically, the only costs are administrative costs.⁸⁰ This allows greater profit maximization to be achievable when an enterprise brings intellectual property to the global marketplace. Consequently, such enhanced potential revenue generation may justify greater limitations on patent rights in contrast to the rights afforded other types of property.⁸¹

II. BENEFITS OF PATENT LAW

A. Promotes Innovation

⁷⁸ “Marginal cost” is defined as “[t]he extra cost of producing an extra unit of output.” See THE MIT DICTIONARY OF MODERN ECONOMICS, *supra* note 45 at 262.

⁷⁹ See GOLDSTEIN, *supra* note 76 at 7 (unlimited number of individuals can utilize intellectual property without depleting it).

⁸⁰ See *generally id.* (“once information has been produced, its use may benefit an indeterminate number of users without imposing any additional costs on the producer”). See also Erik S. Maurer, *An Economic Justification for a Broad Interpretation of Patentable Subject Matter*, 95 NW. U. L. REV. 1057, 1060-61 (2001).

⁸¹ See *id.* (“Because information can be used endlessly and by unlimited numbers of people, and because no one’s use of the information will interfere with the owner’s physical dominion over it, legislatures and courts tend to tolerate more extensive inroads into intellectual property than they would if land or goods were in issue.”).

The most obvious benefit of patent law is that it promotes investment in research and development to create innovative products.⁸² Devoting resources to the development of technology would represent a poor business decision if such technology could be freely pirated by third parties.⁸³ Patent protection limits the risk of such pirating and thereby promotes decisions to invest in the development of new technology.⁸⁴

⁸² This is important because a lot of research and development does not lead to marketable products. *See, e.g.,* SINGHAM, *supra* note 16 at 373 (only one of every 4000 new chemical compounds discovered in the laboratory is marketed). Therefore, it is important for patent protection to enable an adequate profit to be made from the patentable products that are marketable in order to make research and development economically desirable. This is especially true in the pharmaceutical industry where the cost of single new drug has been estimated to cost \$500 million. *See id.* A recent study estimates that the current cost to develop a prescription drug has risen to \$802 million rather than the commonly cited cost of \$500 million. *See* Gardiner Harris, *Cost of Developing Drugs Found to Rise*, WALL ST. J., Dec. 3, 2001 at B14. It takes, on average, twelve to fifteen years to bring a new drug to market; and, the majority of drugs that are marketed do not generate sufficient revenue to cover research and development costs. Additionally, on average, only one out of every 5,000 medicines tested is ultimately approved for patient use. *See* Doris Estelle Long, *First, "Let's Kill All the Intellectual Property Lawyers!": Musings on the Decline and Fall of the Intellectual Property Empire*, 34 J. MARSHAL L. REV. 851, 869-70 (2001). *See also* Kenneth W. Dam, *Some Economic Considerations in the Intellectual Property Protection of Software*, 24 J. LEGAL STUD. 321, 333 (1995) (absent intellectual property rights it would be difficult to recoup research and development costs and the result would be a decrease in research and development spending). Innovation is also important for a company to survive. A company "can ride one product for a while, but you've got to be able to build new ones" to continue to survive in the marketplace. This is especially important in our modern world where the rapid pace of technological change can quickly render a new product obsolete in the marketplace. *See* Scott Kirsner, *PTC's Second Act*, BOSTON GLOBE, Dec. 10, 2001 at C5.

⁸³ One study suggests that 65% of medicines would not have been introduced or developed absent patent protection. *See id.* at 374. *See also* MAURER, *supra* note 80 at 1061 (piracy or free-riding is disincentive to invention).

⁸⁴ *See* MAURER, *supra* note 80 at 1063 ("patents defeat free-riding"). One drug company engaged in almost twenty years of research efforts to develop a new drug, called Xigris, to fight sepsis infections. *See* Thomas M. Burton, *Can Hospitals Afford Not to Prescribe Xigris, Eli Lilly's New Drug?*, WALL ST. J., Sept. 11, 2001 at B1. Arguably, such research efforts will not be pursued absent the ability to gain patent protection for commercially marketable products that result from such research. Of course, the expense and uncertainty of research leading to success can result in high drug prices in order to recoup significant research and development expenses.

Patent protection also increases the number of parties who engage in creative processes because it levels the playing field between small individual inventors and large enterprises such as multinational corporations.⁸⁵ United States patent law charges reduced fees for individual inventors, small enterprises and non-profit organizations.⁸⁶ Additionally, the law awards patent rights to the first party to invent.⁸⁷ The date of conception of an invention is the controlling date if a dispute arises among inventors who independently create the same invention.⁸⁸ This allows a small inventor, who conceives the invention first, to prevail against a large entity that independently conceives the invention later but is able to make the leap from conception to an actual working version of the invention much faster than the small inventor because the large enterprise has greater resources.⁸⁹ Consequently, the property rights granted to a small inventor

For example, once Xigris is approved for use in the U.S., experts estimate it will sell for \$5000 per dose. *See* SINGHAM, *supra* note 16 at 374.

⁸⁵ *See generally* Craig Allen Nard, *Certainty, Fence Building, and the Useful Arts*, 74 IND. L.J. 759, 771 (1999); *see also* Arkie Lures, Inc. v. Gene Larew Tackle, Inc., 119 F.3d 953, 957 (Fed. Cir. 1997) (“patent law is designed to serve the small inventor as well as the giant research organization”).

⁸⁶ *See* 35 U.S.C. § 41(h)(1).

⁸⁷ *See* 35 U.S.C. § 102(g). This is in contrast to virtually all other countries which award patent rights to the first party to file a patent application. *See* GOLDSTEIN, *supra* note 76 at 424.

⁸⁸ *See* 35 U.S.C. § 102(g)(2).

⁸⁹ *See* Jeffery E. Robertson, *If it ain't Broke, Don't Fix it: The Unnecessary Scope of Patent Reform as Embodied in the "21st Century Patent System Improvement Act" and "The Omnibus Patent Act of 1997"*, 5 J. INTEL. PROP. L. 573, 595 (1998) (U.S. first to invent patent system protects small inventors). *See also* Amy E. Carroll, *Biotechnology and the Global Impact of U.S. Patent Law*, 44 AM. U.L. REV. 2433, 2446 & n.79 (1995) (noting first to invent system benefits interests of small inventor who often operate with limited funds). Although protection of small inventors is the reason typically advanced for the first to invent patent system in the U.S. (*See* Sean T. Carnathan, *Patent Priority Disputes--A Proposed Re-Definition of "First-to-Invent"*, 49 ALA. L. REV. 755, 768 & 792 (1998)) other commentators argue that empirical evidence refutes the benefit to small inventors. *See* Charles R. B. Macedo, *First-to-File: Is American*

by a patent restrict the ability of a large enterprise to take advantage of the small inventor. This is beneficial to society because maximizing the number of persons engaged in creative endeavors is likely to be directly proportional to increasing the number and scope of useful innovations that reach the marketplace.⁹⁰

Absent patent rights, marketplace innovation would have to be protected by market position and economic barriers. This would favor large enterprises, such as multinational corporations, which have substantial resources that can be devoted to extensive marketing budgets that make their names and/or trademarks household names that are readily known worldwide.⁹¹ Additionally, their dominant marketplace positions provide economic marketplace barriers against individuals and small enterprises.⁹² Hence, absent the availability of patent rights the number of entities responsible for innovations would be decreased; this would decrease the overall amount of innovations available since fewer enterprises would be engaged in such activities. Additionally, the dominant players in the market would have reduced incentives to be continually vigilant in the pursuit of improved products since the economic market barriers

Adoption of the International Standard in Patent Law Worth the Price?, 1988 COLUM. BUS. L. REV. 543, 579-80 (1988).

⁹⁰ This is important since only a small number of patented inventions are actually commercially viable. *See* EASTERBOOK, *infra* note 112.

⁹¹ *See, e.g.*, *In re Owens-Corning Fiberglass Corp.*, 774 F.2d 1116, 1127 (Fed. Cir. 1985) (evidence of advertising expenditures to develop recognition of trademark, which exceeded \$42 million); *Quality Inns Int'l, Inc. v. McDonald's Corp.*, 695 F. Supp. 198, 212 (D.Md. 1988) (McDonald's spends almost a billion dollars a year on marketing and advertising). *See generally* SMITH, *supra* note 51 (COCA-COLA trademark valued at \$34 billion by Coca-Cola Company).

⁹² *See* Mark W. Lauroesch, *Genetic Engineering: Innovation and Risk Minimization*, 57 GEO. WASH. L. REV. 100, 103 (1988) (competition is fostered in the field of genetic engineering by patent law because a patent may enable a small enterprise to enter the field dominated by large enterprises).

would limit the number of entities that could successfully compete even if they had a superior product.

B. Public Disclosure of New Technology

A major benefit of patent law is the exposure of new innovations to the public.⁹³ Either eighteen months after a patent application is filed or upon patent issuance, the patent application and all documents created during the prosecution of the patent application become public documents.⁹⁴ Therefore, full public disclosure of new technology taught by a patent is available to others. Although the patented invention cannot be used by third parties during the patent term without the permission of the patent owner,⁹⁵ the mere availability of the information in the patent can be beneficial information that may be useful to others such as researchers working in the same field. This technology may provide the necessary basis for inventive activities by others.⁹⁶ It may also be the basis of future improvements developed by others. Such improvements are independently patentable;⁹⁷ and, therefore, a strong incentive exists to spend creative energy and funds to develop improvements.

⁹³ See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151, 109 S. Ct. 971, 978 (1989) (“ultimate goal of the patent system is to bring new designs and technologies into the public domain through disclosure”).

⁹⁴ See 35 U.S.C. § 122(b).

⁹⁵ *Id.* §§ 154(a)(1) & 271(a).

⁹⁶ See generally *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481, 94 S. Ct. 1879, 1886 (1974).

⁹⁷ See 35 U.S.C. § 101.

C. Discourages Reliance on Trade Secret Law

Absent patent law, the fruits of inventive activity would often be maintained in secrecy in order to limit copiers from getting a free ride.⁹⁸ This would deprive the public of much technological innovation. Although trade secret law⁹⁹ provides some degree of protection it is often inadequate for some types of inventions.¹⁰⁰ For example, if an invention is incorporated into a product that is sold to the public it may be reverse engineered by anyone who has come into lawful possession of that product.¹⁰¹ Additionally, a trade secret owner must always worry about the possibility that a third party may independently discover or develop the secret technology. Neither reverse engineering nor independent development is barred by trade secret law;¹⁰² nor is either activity actionable by the trade secret owner. A trade secret owner must also be concerned with inadvertent disclosure of the secret information by employees or other parties

⁹⁸ See WARD S. BOWMAN, JR., PATENT AND ANTITRUST LAW – A LEGAL AND ECONOMIC APPRAISAL 13 (1973).

⁹⁹ See Uniform Trade Secrets Act, 14 U.L.A. 433 (West 1990) (adopted by majority of states; although some states made changes to the Uniform Act).

¹⁰⁰ See, e.g., David R. Owen, *Interfaces and Interoperability in Lotus v. Borland: A Market-Oriented Approach to the Fair Use Doctrine*, 64 FORDHAM L. REV. 2381, 2389 (1996) (trade secret law is inadequate to protect mass-marketed product) (citing Raymond T. Nimmer & Patricia A. Krauthaus, *Software Copyright: Sliding Scales and Abstracted Expression*, 32 Hous. L. Rev. 317, 329 (1995)).

¹⁰¹ “[R]everse engineering” has been defined as the process of “starting with the known product and working backward to divine the process which aided in its development or manufacture.” *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476, 94 S. Ct. 1879, 1883 (1974).

¹⁰² See *id.*

with access to the technology¹⁰³ because public disclosure of a trade secret, for any reason, vitiates the trade secret and makes it part the public domain.¹⁰⁴ Hence, the longevity of technology maintained as a secret is uncertain. In contrast, patent protection has a definite term;¹⁰⁵ plus, subsequent reverse engineering and independent development are not defenses to patent infringement.¹⁰⁶ Therefore, patent protection, in contrast to trade secret protection, provides a higher degree of certainty in terms of the length of the potential market advantage provided to an innovation protected by a patent.¹⁰⁷ Additionally, it is easier to quantify the potential risks associated with protecting an innovation via patent law as opposed to trade secret law. This ability to quantify risk is important in the business world with regard to attracting

¹⁰³ *See id.*

¹⁰⁴ This can be a serious problem especially when a workforce is highly mobile. It provides an incentive for a company to hire away key employees from competitors. *See generally* PepsiCo, Inc. v. Redmond, 54 F.3d 1262 (7th Cir. 1995) (action temporarily enjoining Quaker Oats Co. from employing former employee of PepsiCo, Inc., because former employee possessed secret information belonging to PepsiCo, Inc., and would inevitably disclose trade secrets to competitor if he accepted competitor's offer of employment).

¹⁰⁵ *See* 35 U.S.C. § 154(a)(2) (the term of a U.S. utility patent begins upon patent issuance but it ends twenty years from the date the patent application was filed).

¹⁰⁶ *See* Kewanee Oil Co., 416 U.S. at 490, 94 S. Ct. at 1890.

¹⁰⁷ However, some degree of risk exists despite reliance on a patent. If a patent is issued by the U.S. Patent and Trademark Office it is presumed valid. *See* 35 U.S.C. § 282. Nevertheless, in an action for patent infringement the alleged infringer can contest the validity of the patent. In such a case, a court can independently review a patent to determine if it meets the requirements for patentability and was properly issued. If it is found that the patent should not have been issued, it can be invalidated by the court. *See id.* *See also* Jay P. Kesan & Marc Banik, *Re-Engineering Patent Law: The Challenge of New Technologies: Part I: Administrative Law Issues: Patents as Incomplete Contracts: Aligning Incentives for R & D Investment with Incentives to Disclose Prior Art*, 2 WASH. U. J.L. & POL'Y 23, 25 (2000) (patent can be viewed as contingent property interest because it can be rescinded after issuance).

capital. Consequently, patent protection provides a form of protection that is preferable to secrecy for many inventions.¹⁰⁸

D. Promotes Competition

A patented invention that is economically successful in the marketplace will typically generate competitors who will be drawn to enter a market that has demonstrated success. The information disclosed in the patent acts as a roadmap for inventing around the patented invention or for developing alternate technologies that accomplish the same result as the patented invention.¹⁰⁹ This can generate a variety of alternatives for the marketplace to adopt. This facilitates competition which is beneficial in terms of producing downward price pressure and in minimizing the market power of any competitor. Additionally, it provides an incentive for the patent owner to continue to refine and improve their product so that they will remain

¹⁰⁸ Nevertheless, trade secret protection remains a viable option that is still used for certain types of technological innovation. For example, manufacturing processes are good candidates for trade secret protection when the resulting product does not disclose the process nor can it be reverse engineered to determine the secret process. In fact, the recent TRIPS Agreement includes a requirement that member nations enact trade secret law that is very similar to U.S. trade secret law. *See* TRIPS Agreement, *supra* note 8, at Article 39; *see also* Uniform Trade Secrets Act, *supra* note 99. This is significant in light of the fact that trade secret law either did not exist or was undeveloped in many countries prior to the TRIPS Agreement.

¹⁰⁹ *See* London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1538 (Fed. Cir. 1991) (“designing or inventing around patents to make new inventions is encouraged”). It should be noted that the recent federal circuit decision in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 234 F.3d 558 (Fed. Cir. 2000), greatly limited the scope of patent claims and made it easier for a third party to ascertain the scope of a patent. This facilitates inventing around a patent since the boundaries of the patent are clearer. The Supreme Court has agreed to hear an appeal of *Festo* (*see* 121 S. Ct. 2519 (2001)); however, as of the date this article was written the Supreme Court has not handed down a decision in the case.

competitive.¹¹⁰ Ultimately, this benefits the public both by limiting prices and by making a continuous stream of new innovations and technologies available to the public.¹¹¹

E. Potential Economic Gain Promotes Innovation

The driving force behind our free enterprise economic system is the potential for economic gain.¹¹² Arguably, for most people, this is the strongest incentive to devote time, energy and money to develop new technology.¹¹³ The patent system taps into this by providing an economic incentive for developing innovative technologies and for improving existing technologies. This potential value that may be realized via obtaining patent rights is increasingly inducing many individuals and enterprises to devote substantial time, energy and capital to

¹¹⁰ See generally *KESAN*, *supra* note 107 at 23 (also permits competitors to use information disclosed by patent to refine or improve patented invention). Improvements of existing inventions are independently patentable. See 35 U.S.C. § 101.

¹¹¹ See *State Industries, Inc. v. A.O. Smith Corp.*, 751 F.2d 1226, 1235-36 (Fed. Cir. 1985) (“keeping track of a competitor’s products and designing new and possibly better or cheaper functional equivalents is the stuff of which competition is made and is supposed to benefit the consumer. One of the benefits of a patent system is its so-called ‘negative incentive’ to ‘design around’ a competitor’s products, even when they are patented, thus bringing a steady flow of innovations to the marketplace”).

¹¹² See generally Frank H. Easterbrook, *Cyberspace versus Property Law?*, 4 TEX. REV. LAW & POL. 103, 106 (1999) (few patents make significant money but inventors continue to pursue new inventions because they hope their invention is one of the few highly profitable ones).

¹¹³ Competition, a basic tenet of our free enterprise system, disciplines the marketplace by causing capital to flow toward successful enterprises and away from unsuccessful ones. Consequently, it is the potential for economic gain that drives competitors since in a free enterprise system an enterprise must succeed economically to survive. See generally *U.S. v. Syufy Enterprises*, 903 F.2d 659, 662-63 (9th Cir. 1990). See also GARDINER C. MEANS, *PRICING POWER & THE PUBLIC INTEREST* 176-77 (1976) (capital moves to activities which provide highest rate of return).

research and development activities.¹¹⁴ In recent years, universities have become more aggressive in seeking patent law protection for the results of their research.¹¹⁵ This allows them to generate revenue that is used to further fund research activities and other university programs.

Many of the patents that result from research and development activities have little economic value.¹¹⁶ Nevertheless, it is the *potential* for economic gain that drives development of innovation that is subsequently protected by patent law. The fact that much patented technology lacks economic viability at the time of patenting does not diminish the substantial public benefit of such technology. Such information is widely available to the public via the public disclosure aspect of patent law.¹¹⁷ This increases the public storehouse of information which is beneficial to

¹¹⁴ See Mark A. Lemley, *Reconceiving Patents in the Age of Venture Capital*, 4 J. SMALL & EMERGING BUS. L. 137, 138 (2000) (noting the significant increase in the number of patents being obtained); Under Secretary Dickinson's Address to the ABA Section of Intellectual Property Law, Summer Conference Boston, Massachusetts, Section of Intellectual Property Law, (June 23, 2000), 1 USPTO TODAY 49, 54-55, June-July 2000, at 13 (noting that Patent & Trademark Office workload up almost 70% since start of Clinton-Gore presidential administration due to large increase in invention and innovation). See generally SMITH, *supra* note 51 (major assets of many companies today consist of intellectual property).

¹¹⁵ See Hayden R. Brainard, *Survey and Study of Technology Development and Transfer Needs in New York*, 9 Alb. L.J. Sci. & Tech. 423, 433-34 (1999) (stating that universities view intellectual property as a potential revenue source).

¹¹⁶ See Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 Calif. L. Rev. 805, 840-41 & n.166 (1988) (empirical evidence suggests most patents have limited economic value); see *id.* at 841 n.167 (very broad patents, often called pioneer patents, may have substantial economic value but such patents are rare). See also EASTERBROOK, *supra* note 112 ("most inventions receive no royalties; about ten percent earn significant returns, and a very few have huge payoffs").

¹¹⁷ Patents are typically published upon issuance. The U.S. Patent & Trademark Office publishes information about issued patents in a weekly publication called the Official Gazette. Additionally, commercial database providers such as LEXIS-NEXIS provide the full text and drawings for patents. The Patent & Trademark Office also makes paper copies of issued patents available. Such patents can also be accessed directly from the Patent & Trademark Office web site, at <http://www.uspto.gov/patft/index.html> (last visited May 20, 2002). Many countries also

society. Knowledge and information of all types are the raw materials of research and innovation. Therefore, the more information that is available the more likely it will be used by others to develop additional innovations; and, the more innovations that are developed the more likely at least some of these will be highly useful to society. As long as at least some of this patented innovation generates substantial revenue individuals and enterprises will continue to devote resources to research and development. Additionally, some of the economically valuable patented technology will provide substantial public benefits such as, among other things, providing drugs that eliminate the risk of certain diseases.

F. Promotes Private Funding of Research & Development

The potential for economic reward from patenting new innovations acts as a magnet for private capital investment.¹¹⁸ At the most basic level, capital is a commodity¹¹⁹ in a free enterprise economic system. Therefore, venture capitalists, investment bankers and many large corporations seek to invest their money in enterprises that have the potential to provide monetary

publish patent applications 18 months after they are filed. Recent changes in U.S. patent law provides for the U.S. Patent & Trademark office to publish patent applications 18 months after filing. *See* 35 U.S.C. § 122(b) (2002).

¹¹⁸ *See* SINGHAM, *supra* note 16, at 380 (strong patent system encourages venture capital financing; less venture capital available in developing countries than in developed countries, due, in part, to weak intellectual property systems in developing countries as compared to stronger intellectual property systems in many developed nations). *See also id.* at 374 n.37 (citing Rajesh Garg et al., *Four Opportunities in India's Pharmaceutical Market*, 4 MCKINSEY Q. 132 (1996)(study indicates multinational corporations restricted involvement in pharmaceutical market in India after country adopted weak patent law in 1970)).

¹¹⁹ *See* MIT, *supra* note 45 for definition of “commodity.”

rewards in the form of a return on investment.¹²⁰ The economic potential provided by patents encourages capital investment both in research and development activities and in the manufacture and marketing of new technology. This is important because creative individuals often lack the resources to take a promising technology to the marketplace. Therefore, a typical marriage of creative types with capital providers can facilitate transforming technology from the laboratory to a marketable product available to consumers.

The only other source of capital for development activities is the government. However, typically, the use of private capital will be more efficient than government funding. Private funding decisions will be marketplace driven. Therefore, decisions will be made rapidly. This is important today in light of the rapidly evolving nature of new technologies. In contrast, governmental decision-making tends to be slow, deliberative and subject to political considerations; therefore, it is often inefficient because it is unable to respond to the rapidly changing marketplace. Additionally, the use of private capital, as opposed to government funding, places the risk of loss directly on private investors rather than on the taxpaying public who are the basic source of governmental capital.

G. Recognizes Private Property Aspect of Intellectual Property

Patent law recognizes and treats patents as intangible private property.¹²¹ This allows patent rights, at least from a business or economic perspective, to be viewed as an asset with

¹²⁰ See *Patlex Corp. v. Mossinghoff*, 758 F.2d 594, 599, *modified* 771 F.2d 480 (Fed. Cir. 1985) (“the encouragement of investment-based risk is the fundamental purpose of the patent grant”).

¹²¹ See *supra* text accompanying notes 47 and 48.

value like any other asset, tangible or intangible, that is owned by a business. This is consistent with the economic and business view of property generally in our modern technological age. Further, it recognizes that business assets today consist of both tangible assets and intangible intellectual property.¹²² Treating them consistently as property, albeit different types of property, allows uniform and predictable bodies of law to apply equally to business assets in general. This is especially important today when intellectual property, in addition to tangible property, may be used, for example, as security for financing.¹²³ Additionally, intellectual property may be the key asset that is sought in a corporate takeover.¹²⁴ Predictable application of different bodies of law to all types of property facilitates the ability of an enterprise to quantify risk. This encourages the use of intellectual property that ultimately promotes innovation that benefits society.

III. DETRIMENTS OF PATENT LAW

A. Interference with the Marketplace

¹²² See *supra* note 51 and accompanying text.

¹²³ See Shawn K. Baldwin, Comment, *"To Promote the Progress of Science and Useful Arts": A Role for Federal Regulation of Intellectual Property as Collateral*, 143 U. PA. L. REV. 1701, 1730 (1995) ("a company or individual must often offer intellectual property as security in order to obtain financing to enable the use of that intellectual property"); see also Aimee A. Watterberg, Comment, *Perfecting a Security Interest in Computer Software Copyrights: Getting it Right*, 15 J. MARSHALL J. COMPUTER & INFO. L. 855, 858 (1997) (intellectual property has been used as collateral to raise money in the past by famous inventors such as Thomas Edison).

¹²⁴ See generally *Valutron, N.V. v. NCR Corp.*, 33 U.S.P.Q.2d 1986 (S.D. Oh. 1992) (main asset of corporation was a U.S. Patent).

The biggest downside of the patent system is that issuance of a patent has the potential to interfere with the marketplace.¹²⁵ This is a significant issue for a country, such as the United States, that relies on a free market economic system.¹²⁶ It is also a major international trade issue in light of the push for adoption of free trade worldwide by members of the WTO.¹²⁷

Such marketplace interference can lead to market distortions and interfere with competition.¹²⁸ For example, a patent can insulate a producer from some degree of competition.¹²⁹ If few substitutes exist for the patented product the resulting lack of competition can allow the patent owner to engage in profit maximization.¹³⁰ It may also be possible to manipulate market demand for the product by controlling the available supply. A company can also obtain a large inventory of patents in a specific field. This can allow a large enterprise –

¹²⁵ See *Mercoid Corp. v. Mid-Continent Investment Co.*, 320 U.S. 661, 665, 64 S.Ct. 268, 271 (1944) (patent grants “a right to be free from competition in the practice of the invention”).

¹²⁶ See *supra* note 52 for definition of “free market.”

¹²⁷ As of January 1, 2002, 144 countries were members of the WTO. This includes the United States, South Africa, United Kingdom, Australia, Austria, Belgium, France, Germany, Italy, Gabon, Ghana, Haiti, India, Japan, Kenya, Rwanda and Senegal. See WTO list of members and observers, at http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm#members (last visited May 20, 2002). For general information about the WTO, see WTO Website, at <http://www.wto.org/> (last visited May 20, 2002).

¹²⁸ Both the patent law and antitrust law can be viewed as positive market interferences that prevent marketplace failures. See MAURER, *supra* note 80 at 1093 (“Patent law corrects free-riding market failures, whereas antitrust law corrects market failures of restrained trade”). Antitrust law is accepted as a market interference because it facilitates marketplace competition. See *7-Up Bottling Co. v. Archer Daniels Midland Co.*, 191 F.3d 1090, 1094 (9th Cir. 1999) (“purpose of the antitrust laws is to promote competition”).

¹²⁹ See *supra* note 125.

¹³⁰ Typically, substitutes do exist for most patented products. See *supra* notes 21 and 24 and accompanying text.

such as a multi-national corporation – to limit competition in the field because the patent portfolio can act as a deterrent for competitors to enter the field. Such competitors will either have to pay licensing fees to the patent portfolio owner that increases their cost to do business; or, they will have to challenge the relevant patents in judicial proceedings if they believe they are invalid. However, judicial challenges may be a deterrent to enter the field even if the competitor believes the challenge will be successful because such challenges are very costly and time consuming.¹³¹

B. Deprives Developing Nations of Access to Technology

The economic disparity between developed and developing nations results in a “catch-22.” Developing nations need access to modern technology to facilitate modernizing their economy and improving their infrastructure. However, because of their weak economic position developing countries typically lack adequate economic resources to purchase such needed technology. The patent system can exacerbate this problem if it interferes with the marketplace and drives up the costs of technology.

For example, if a product, such as a new drug, is patented and has few alternatives the patent owner can utilize her patent to achieve significant market control. If the product is a necessity, for example a lifesaving drug, members of the public may be willing to pay a supra-competitive price for the drug. The price charged may even be inflated further in light of the

¹³¹ See Matthew D. Powers & Steven C. Carlson, *The Evolution and Impact of the Doctrine of Willful Patent Infringement*, 51 SYRACUSE L. REV. 53, 101 (2001) (estimating that the cost to litigate a patent dispute typically ranges from \$3 million to \$5 million) (citing Interview with the Honorable Mary Pat Thyng, Magistrate Judge, U.S. District Court for the District of Delaware, in Wilmington, Del. (Mar. 22, 2000)).

widespread availability of health insurance¹³² in the United States which relieves patients from paying the full cost of medical care directly.¹³³ Additionally, the patent owner may have an incentive to charge as high a price as possible in an effort to quickly recoup extensive research and development costs in light of the fact that competitors may develop alternative drugs that can limit the market share of the patent owner and therefore interfere with her ability to recoup development costs.¹³⁴

High consumer prices for patented products, especially lifesaving drugs, can be devastating to developing countries where widespread disease exists but few people (or governments) can afford even rudimentary healthcare.¹³⁵ The current spread of HIV/AIDS, as well as other diseases, goes unchecked and people die due to an inability to afford costly health care including patented drugs.¹³⁶ Patent owners, typically for-profit enterprises, must make a

¹³² See Susan Rose-Ackerman, *Inalienability and the Theory of Property Rights*, 85 COLUM. L. REV. 931, 948-49 (1985) (stating that most Americans are covered by health insurance).

¹³³ See Katherine Pratt, *Funding Health Care with an Employer Mandate: Efficiency and Equity Concerns*, 39 ST. LOUIS L.J. 155, 177 n.109 (1944).

¹³⁴ Additionally, more pressure exists today to charge higher prices for marketable drugs because of the increasing complexity of developing new drugs. This has resulted in higher research and development costs which produces fewer marketable drugs.

¹³⁵ “Eighty-nine percent of the world’s HIV infected population lives in the poorest ten percent of countries.” John A. Harrelson, *TRIPS, Pharmaceutical Patents, and the HIV/AIDS Crisis: Finding a Proper Balance Between Intellectual Property Rights and Compassion*, 7 WIDENER L. SYM. J. 175, 176-77 (2001) (citation omitted); see also *id.* at 176 n.17 and accompanying text. See also Allyn Lise Taylor, *Making the World Health Organization Work: A Legal Framework for Universal Access to the Conditions for Health*, 18 AM. J.L. & MED. 301, 304 (1992) (stating that developed nations have much longer life expectancy and lower child mortality rates than do developing nations).

¹³⁶ Developing countries are suffering terribly from the HIV/AIDS epidemic. “Thirteen percent of South Africans, fourteen percent of Kenyans and twenty-five percent of Zimbabweans

choice between maximizing profits to ensure the continued viability of the business and making a product available inexpensively to minimize human suffering. In the United States most large drug manufacturers are publicly traded for-profit corporations that have a fiduciary obligation to make business decisions that economically benefit the shareholders who own the enterprise.¹³⁷ Therefore, they have no incentive to reduce prices for developing countries; nor may it be a legitimate business decision for a for-profit corporation to lower prices in light of the fiduciary obligations of corporate directors and officers.¹³⁸

IV. POTENTIAL SOLUTIONS

A. General Considerations

1. Limiting Patent Rights can Reduce their Economic Value

Recognition of patents as property does not provide the patent owner with unrestricted rights to use her property in any manner.¹³⁹ Most property is subject to limited restrictions that

have HIV/AIDS. The incidence of HIV/AIDS is also high in a number of Asian nations.” *See* HARRELSON, *supra* note 135 at 187 (citations omitted).

¹³⁷ *See, e.g.*, U.S. v. Jolly, 102 F.3d 46, 48 (2d Cir. 1996) (“corporation’s management ... owes fiduciary obligation to shareholders”).

¹³⁸ *See supra* note 73.

¹³⁹ *See* U.S. v. Microsoft Corp., 253 F.3d 34, 63 (D.C. Cir. 2001) (owner of intellectual property does not have absolute right to use property in any manner without restriction).

are necessary for the maintenance of an ordered society;¹⁴⁰ additionally, some restrictions are necessary for the benefit of the public.¹⁴¹ Consequently, patents, like both real property and tangible personal property, may be subject to limitations.¹⁴² Additionally, it has been recognized that limitations on property rights may not be compensable in all cases even if they have an economic impact on the value of the property.¹⁴³ Hence, governmental restrictions on patent

¹⁴⁰ For example, nuisance law may prevent a real property owner from engaging in certain otherwise legal uses of her property which may substantially interfere with another property owner's use and enjoyment of her property. *See, e.g.,* *Spur Industries, Inc. v. Del E. Webb Development Co.*, 494 P.2d 700 (Ariz. 1972) (holding that a feedlot operator must close down business, under a nuisance theory, because it interfered with use and enjoyment of nearby residential area). *See generally* W. PAGE KEETON, DAN B. DOBBS, ROBERT E. KEETON & DAVID G. OWEN, *PROSSER & KEETON ON TORTS* § 87 at 619 (5th ed. 1984) (“essence of a private nuisance is an interference with the use and enjoyment of land”).

¹⁴¹ For example, zoning laws and land-use regulations are legitimate limitations on real property rights that are imposed for the general benefit of the public. Additionally, restrictions exist with regard to the transfer of some tangible personal property such as weapons and prescription drugs. *See generally* *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 413, 43 S. Ct. 158, 159 (1922) (“Government hardly could go on if to some extent values incident to property could not be diminished without paying for every such change in the general law.”).

¹⁴² *See generally* *White v. Samsung Electronics America, Inc.*, 989 F.2d 1512, 1516 (9th Cir. 1993) (Kozinski, J., dissenting) (“intellectual property law is full of careful balances between what's set aside for the owner and what's left in the public domain for the rest of us: The relatively short life of patents; the longer, but finite, life of copyrights; copyright's idea-expression dichotomy; the fair use doctrine; the prohibition on copyrighting facts; the compulsory license of television broadcasts and musical compositions; federal preemption of overbroad state intellectual property laws; the nominative use doctrine in trademark law; the right to make soundalike recordings. All of these diminish an intellectual property owner's rights. All let the public use something created by someone else. But all are necessary to maintain a free environment in which creative genius can flourish.”).

¹⁴³ Of course, if the extent of a governmental restriction or limitation of property rights eliminates most of the economic value of the property it may be a “taking” under the Fifth Amendment which would Constitutionally mandate that the government provide the property owner with reasonable compensation for the lost value. In contrast, limited reduction of the economic value is typically not a taking. *See Dolan v. City of Tigard*, 512 U.S. 374, 385, 114 S. Ct. 2309, 2316 (1994) (land-use regulation does not amount to taking if it “does not den[y] an owner economically viable *use* of his land”) (emphasis added) (citation omitted); *see also* *Palazzolo v. Rhode Island*, 121 S. Ct. 2448, 2457 (2001). Nevertheless, the dividing line between

rights which are for the benefit of the general public should be permissible despite an impact on the economic value of the patent as long as the patent still has significant economic value.¹⁴⁴

A determination of the degree of economic devaluation of a patent that should be permissible can only be ascertained in light of the underlying purpose of the patent system. Patents exist to benefit the public from the development and disclosure of new technology.¹⁴⁵ Therefore, any restrictions on patent rights must be sufficiently limited so that any resulting decrease in economic value does not radically minimize the development of new technology. The mere fact that a restriction on patent rights reduces the patent owner's revenue is not controlling because maximizing an inventor's economic benefit from her invention is neither the goal nor purpose of the patent system. The economic reward is merely a necessary method of getting new technology into the public storehouse of knowledge.¹⁴⁶ As long as any limitations on patent rights fail to substantially limit the development and public disclosure of new technology such restrictions are consistent both with the underlying purpose of patent law and the fact that patents are property.

a taking and non-compensable limitation or restriction of property rights is not entirely clear. However, this is an issue beyond the scope of this paper.

¹⁴⁴ This is analogous to the treatment of real property whose use can be regulated by the government for the public benefit without such regulation giving the property owner a right of compensation, provided the landowner still has some viable economic use for the property. *See* Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 1016, 112 S.Ct. 2886, 2894 (1992). *See also* Palazzolo v. Rhode Island, 121 S. Ct. 2448, 2457 (2001) (land use regulation that denies all economically viable use of property is a taking but if land still has economic use it may or may not be a taking depending upon a variety of other factors).

¹⁴⁵ *See supra* note 93 and accompanying text.

¹⁴⁶ *See supra* note 72 and accompanying text.

2. *Limiting Patent Rights is a Marketplace Interference*

Any limitation on the property rights created by patent law can be viewed as a marketplace interference.¹⁴⁷ However, patent rights, which are created by statutory law,¹⁴⁸ are in reality an interference with the free market.¹⁴⁹ Absent patent law, public disclosure of innovative technology injects it into the public domain.¹⁵⁰ Once such information is in the public domain it is free for anyone to use. Consequently, without patent rights, a company would have to utilize secrecy,¹⁵¹ if possible, or engage in substantial marketing and branding efforts, including creation of and reliance on strong trademarks, to compete in the marketplace against copyists and

¹⁴⁷ Of course, it can also be argued that the existence of patent rights actually facilitates the creation of a competitive market by preventing a market failure due to free-riding. *See MAURER, supra* note 128.

¹⁴⁸ *See* 35 U.S.C. §§ 1-376.

¹⁴⁹ *See supra* note 125.

¹⁵⁰ *See generally* *Compco Corp. v. Day-Brite Lighting, Inc.*, 376 U.S. 234, 237-38, 84 S. Ct. 779, 781-82 (1964) (state law cannot prohibit copying functional innovation that is not patented).

¹⁵¹ Typically, secrecy, under the guise of trade secret law, is often used to protect certain technology. For example, a process is a good candidate for secrecy when the resulting product will not reveal the manufacturing process used to create the product. *See generally* PETER D. ROSENBERG, 1 PATENT LAW FUNDAMENTALS § 3.14 at 3-63 (2000 rev.) (formula for Coca-Cola and Drambuie defy chemical analysis so they are good candidates for reliance on trade secrecy). Under the Uniform Trade Secrets Act, which has been adopted in most states (*see* 14 U.L.A. 177 (Supp. 2001)), something must be the subject of reasonable secrecy efforts to be a trade secret protected by law. *See* Uniform Trade Secrets Act § 1(4)(ii), 14 U.L.A. 433 (1990). However, public disclosure of a trade secret eliminates any legally protectible rights under trade secret law because absent secrecy a trade secret does not exist. *See Metallurgical Industries, Inc. v. Fourtek, Inc.*, 790 F.2d 1195, 1199 (5th Cir. 1986).

free-riders.¹⁵² In light of this, any restrictions on the rights of patent owners can be viewed as reducing the marketplace interference created by the mere existence of patent rights that alter the marketplace by interfering with competition.

3. *Pragmatic Considerations*

Tangible property can only reside in one specific location at a time; furthermore, it is not always easy to move it from one country to another. In contrast, intellectual property does not stay confined to a specific location.¹⁵³ It freely flows throughout the world without respecting national boundaries or natural barriers such as oceans or mountain ranges.¹⁵⁴ Additionally, the advent of business enterprises operating in the global marketplace has increased the availability of such intellectual property throughout the world. Likewise, the Internet has radically increased the efficiency with which information can be disseminated worldwide.¹⁵⁵ The structure and

¹⁵² It has been asserted that some products have enjoyed substantial economic success due to the effective use of trademarks rather than reliance on patent or trade secret law. *See generally* ROSENBERG, *supra* note 151, § 3.15 at 3-66.

¹⁵³ Absent property rights, real property and tangible property could be protected from unauthorized use. In contrast, intangible intellectual property typically must be disclosed to be used. However, once it is disclosed to the public it can no longer be controlled nor contained in a specific geographic area. Therefore, the need for private property rights, via the intellectual property laws, is a necessity to protect intellectual property. *See* GOLDSTEIN, *supra* note 76.

¹⁵⁴ This increases the need for international protection of intellectual property because its value can be easily destroyed by posting it on the Internet, thereby disseminating it worldwide. *See generally* *Universal City Studios v. Reimerdes*, 111 F. Supp. 2d 294, 344 (S.D.N.Y. 2000).

¹⁵⁵ *See* *Blumenthal v. Drudge*, 992 F. Supp. 44, 49 (D.D.C. 1998) (the Internet enables people to communicate with one another with unprecedented speed and efficiency); *State of Florida v. Cohen*, 696 So. 2d 435, 439 (Fla. Dist. Ct. App. 1997) (the Internet allows virtually instantaneous worldwide distribution of images).

scope of the Internet would make it highly difficult, if not impossible, to restrict information flow once information is released onto the Internet.¹⁵⁶ In light of this, worldwide respect for intellectual property rights has become a priority for many countries. This has resulted in international agreements such as the TRIPS Agreement.¹⁵⁷ This agreement demonstrates recognition that access to intellectual property, such as patents, cannot be limited by geographic areas. Consequently, maximizing the economic value of patents requires cooperation on the international level. Nevertheless, such cooperation will deteriorate if widespread human health epidemics, such as the HIV/AIDS crisis,¹⁵⁸ continue to cause great human suffering due to patent rights preventing the distribution of drugs to developing nations. It is therefore necessary to develop a method of increasing distribution of patented HIV/AIDS drugs to developing nations to prevent an eventual breakdown of recognition of patent rights in the international community.¹⁵⁹

4. *An Economic Perspective*

¹⁵⁶ See generally Bruce W. Sanford & Michael J. Lorenger, *Teaching an Old Dog New Tricks: The First Amendment In An Online World*, 28 CONN. L. REV. 1137, 1159 (1996) (Internet facilitates unauthorized copying and dissemination of intellectual property).

¹⁵⁷ See *supra* note 8 and accompanying text. See also ADELMAN, *supra* note 25 at 27 (TRIPS Agreement one of most important commercial treaties in modern history).

¹⁵⁸ See *supra* notes 135-36 and accompanying text.

¹⁵⁹ The battle over patents covering HIV/AIDS drugs has resulted in U.S. drug companies bringing legal action in South Africa and in legal action being brought against Brazil by the U.S. government. Also, in October 2001, both the U.S. government and the Canadian government threatened to ignore the patents on CIPRO, which is a drug used to treat anthrax. Subsequent World Trade Organization trade talks in Qatar in November 2001 reached agreement that developing countries would be able to utilize inexpensive generic versions of patented drugs to treat HIV/AIDS and other health crises. See Geoff Winestock & Helene Cooper, *WTO Envoys Agree to Ease Access to Key Drugs*, WALL ST. J., Nov. 13, 2001 at A17.

Patent rights are primarily used by patent owners to obtain an economic advantage in the marketplace. The ultimate goal is to generate revenue. Therefore, from an economics perspective any proposed limitation must take this into account. In light of this, a patent owner should not be entitled to complain about limitations on her patent rights if monetary compensation is substituted for the effect of such limitations. Once the compensation is received the patent owner is made economically whole.¹⁶⁰ Of course, determining the amount of compensation may prove to be difficult.

5. *Economic Differences Between Developed & Developing Nations*

The fact that patented drugs are beyond the economic means of many developing nations is, to some extent, a function of vast differences between the economies of developed and developing nations. This economic disparity results in the citizens of countries with poor economies having limited access to many things that are widely available in developed nations. For example, a safe and abundant food supply, proper sanitation systems, communications infrastructure, transportation infrastructure, banking systems and educational systems are more

¹⁶⁰ This notion of utilizing money as compensation is basic to the legal system where injuries and damages are routinely reduced to a specific dollar amount that is awarded as compensation. *See, e.g.*, *Spellens v. Spellens*, 49 Cal. 2d 210, 233, 317 P.2d 613, 627 (Ca. 1957) (money damages recoverable for mental suffering due to tort of abuse of process); Catherine L. Kello, *Rape Shield Laws – Is it Time for Reinforcement?*, 21 U. MICH. J.L. REFORM 317, 332 n.63 (1998) (“traditional remedy for defamation and other tort actions is money damages”).

readily available in developed nations than in developing nations.¹⁶¹ The patent system may exacerbate this problem by interfering with the distribution of new drugs due to supra-competitive pricing.¹⁶² However, the patent system is not the source of the underlying problem. The vast economic differences between developed and developing nations is really the rudimentary problem.¹⁶³ Solving this problem will not eliminate profit maximization for patented drugs. But it will minimize the amount of human suffering that such activity will cause.

6. *Public Benefit Perspective*

¹⁶¹ See generally TAYLOR, *supra* note 135 at 305 (poverty and inadequate resources for healthcare primarily responsible for premature deaths of people in the world); see also J.M. Spectar, *The Hybrid Horseman of the Apocalypse: The Global AIDS Pandemic & the North-South Fracas*, 29 GA. J. INT'L & COMP. L. 253, 258-68 (2001) (discussing relationship between poverty and disease).

¹⁶² See generally Gelvina Rodriguez Stevenson, *Trade Secrets: The Secret to Protecting Indigenous Ethnobiological (Medicinal) Knowledge*, 32 N.Y.U.J. INT'L L. & POL. 1119, 1126 (2000) (“Developing countries argue that strong intellectual property laws reinforce the economic power of developed countries and facilitate the transfer of wealth from poorer countries to wealthier ones.”). In contrast, it can be argued the lack of strong patent rights in developing nations may exacerbate the lack of availability of drugs in such countries. Typically, the diseases that kill substantial numbers of people in developing nations are not problematic in developed nations. See TAYLOR, *supra* note 135. Therefore, little incentive exists for a company to develop drugs to combat such diseases absent strong patent rights in a developing nation that represents the major market for such drugs.

¹⁶³ Likewise, even in developed nations, the disparity of wealth results in individuals at the bottom of the economic rung having less access to many things in society. For example, in the U.S., despite the existence of a high-quality healthcare system, many members of society do not receive adequate healthcare because they can neither afford the cost of such care nor the cost of medical insurance. See David A. Hyman, *Consumer Protection in a Managed Care World: Should Consumers Call 911?*, 43 VILL. L. REV. 409, 437 n.98 (1998) (“Approximately 15.5% of the U.S. population is currently uninsured.”). Additionally, many uninsured individuals cannot afford necessary legal representation in appropriate situations.

Disease is a fact of life that has historically caused substantial human suffering.¹⁶⁴ Some diseases have been reduced to the point that few if any people are affected.¹⁶⁵ However, other diseases that menace public health, such as HIV/AIDS, cause significant and widespread human suffering today.¹⁶⁶ Much of this suffering could be alleviated if medical treatment and modern drugs were accessible in developing nations. Unfortunately, many modern drugs are protected by patents that drive up the price of these drugs rendering them unavailable for much of the population in developing nations.¹⁶⁷ This is a particularly serious problem with regard to the

¹⁶⁴ See, e.g., William P. Quigley, *Five Hundred Years of English Poor Laws, 1349-1834: Regulating the Working and Nonworking Poor*, 30 AKRON L. REV. 73, 83 (1996) (the Bubonic Plague of 1348-1349 was responsible for the death of almost one third of England's population); Elizabeth B. Cooper, *Social Risk and the Transformation of Public Health Law: Lessons From the Plague Years*, 86 IOWA L. REV. 869, 888 n.81 (2001) (the polio epidemic was rampant in U.S. from 1916 until it was controlled by development of Salk vaccine in 1955 and Sabin vaccine in 1961); *id.* at 888 n.82 ("ancient diseases of syphilis and gonorrhea continue to plague us"); Taryn Ranae Tomasa, *Ho'Olahui: The Rebirth of a Nation*, 5 ASIAN L.J. 247, 252 n.35 (1998) (Indigenous Hawaiians, following exposure to Westerners, suffered numerous epidemics that "started in 1804 with typhoid fever, which was followed by influenza in 1826, whooping cough in 1832, mumps in 1839, leprosy in 1840, smallpox in 1853, diphtheria in 1890, cholera in 1895, and bubonic plague in 1899-1900").

¹⁶⁵ See, e.g., SPECTAR, *supra* note 161 at 258 n.24 (World Health Organization believes polio will soon be eliminated; leprosy will also be eliminated in light of development of new drug therapy).

¹⁶⁶ See William G. Buss, *Human Immunodeficiency Virus, the Legal Meaning of "Handicap," and Implications for Public Education Under Federal Law at the Dawn of the Age of the ADA*, 77 IOWA L. REV. 1389, 1397 (1992) (HIV/AIDS has caused severe human suffering); see also *supra* note 136. See SPECTAR, *supra* note 161 at 255 ("Worldwide, an estimated 18.8 million people have died of AIDS since the beginning of the epidemic"). See SPECTAR, *id.* at 258 n.24 ("The African continent alone faces several major tropical diseases that threaten the lives of over 500 million people, including malaria (270 million people); schistosomiasis (200 million people); filariasis (107 million people) and leishmaniasis (12 million people)").

¹⁶⁷ See generally Michael J. Malinowski, *Capitation, Advances in Medical Technology, and the Advent of a New Era in Medical Ethics*, 22 AM. J.L. & MED. 331, 341 (1996) ("The paradox of medical technology is that, though it is responsible for alleviating human suffering and disease, it is also responsible for raising health care costs").

HIV/AIDS epidemic.¹⁶⁸ The majority of people suffering from this public health crisis are living in developing nations where limited available economic resources prevent widespread use of patented drugs to treat people.¹⁶⁹

Allowing widespread human suffering and death due to economic limitations has an immoral aspect to it. Nevertheless, such a public health crisis is the type of situation that the marketplace will not solve since the free market is an economic system that tends to be immune to morality. Serious societal issues, such as this, that will not be solved by the private sector are precisely the types of things that fall within the domain of government. Therefore, it is arguably necessary for governments to take action that will alleviate the HIV/AIDS health crisis despite the existence of patent rights that act as a barrier to such actions.¹⁷⁰ The real issue is what actions can be taken to alleviate this widespread health crisis without destroying the patent system which is, to a large extent, responsible for the development of the current drugs and for continued research that will eventually lead, hopefully, to the elimination of the HIV/AIDS crisis.

B. Specific Proposals

1. Eminent Domain

¹⁶⁸ See James Thuo Gathii, *Construing Intellectual Property Rights and Competition Policy Consistently with Facilitating Access to Affordable AIDS Drugs to Low-End Consumers*, 53 FLA. L. REV. 727, 733-34 (2001).

¹⁶⁹ See generally *supra* note 135.

¹⁷⁰ Recent international trade talks seem to suggest that the U.S. and other developed nations see a need to address this issue. See *supra* note 159.

Pursuant to the right of eminent domain the government can take private property for public use without the approval of the property owner.¹⁷¹ This power has traditionally existed in many countries.¹⁷² In the United States it is Constitutionally recognized with the only major limitation being that the government must pay fair market value to the property owner.¹⁷³ This power to take private property has been found applicable to intellectual property;¹⁷⁴ therefore, the United States government can unilaterally decide to appropriate a patented invention for the benefit of the public provided the patent owner is paid for her property. Federal law explicitly recognizes the right of the federal government to take patented inventions in certain technological areas.¹⁷⁵ Arguably, such a taking for public health reasons, such as treating the

¹⁷¹ “Under the eminent domain power, the sovereign may take property for public use without the owner's consent. The power exists as an attribute of sovereignty” John H. Leavitt, *Hodel v. Irving: The Supreme Court's Emerging Takings Analysis – A Question of How Many Pumpkin Seeds Per Acre*, 18 ENVTL. L. 597, 598 n.2 (1988). *See also* Boston & Lowell Railroad Corp. v. Salem & Lowell Railroad Company, 68 Mass. 1, 12, 22 (1854) (every government has power of eminent domain).

¹⁷² *See generally* Elizabeth A. Taylor, *The Dudley Street Neighborhood Initiative and the Power of Eminent Domain*, 36 B.C.L. REV. 1061, 1062 (1995)(eminent domain power goes back to at least early Roman Empire).

¹⁷³ “[P]rivate property [shall not] be taken for public use without just compensation.” U.S. CONST. amend. V, cl. 4.

¹⁷⁴ *See* *Leesona Corp. v. U.S.*, 599 F.2d 958, 964 (Ct. Cl. 1979). *See also* *McCreary v. U.S.*, 35 Fed. Cl. 533, 536 (1996) (“So-called ‘patent infringement’ by the United States is an uncompensated taking of private property under the Fifth Amendment.”); *Dow Chemical Co. v. U.S.*, 32 Fed. Cl. 11, 19 (1994) (unauthorized government use of patented invention “constitutes an eminent domain taking . . . under the Fifth Amendment requiring just compensation”).

¹⁷⁵ *See, e.g.*, Courtenay C. Brinckerhoff, *Medical Method Patents and the Fifth Amendment: Do the New Limits on Enforceability Effect a Taking?*, 4 U. BALT. INTELL. PROP. L.J. 147, 151 (1996) (Atomic Energy Act (42 U.S.C. § 2181) bars issuance of patent on “invention . . . which is useful solely . . . in an atomic weapon” and provides for compensation for government taking of invention).

HIV/AIDS epidemic or combating anthrax would likewise be permissible. Additionally, the United States government recognizes the power of other nations to assert their rights of eminent domain with regard to property in their country.¹⁷⁶

2. *Compulsory Licensing*

The owner of a drug patent could be required to license the right to manufacture and sell the drug in a specific developing country. United States patent law does not provide for statutory compulsory licensing of patented technology.¹⁷⁷ However, the TRIPS Agreement does permit a member country to enact compulsory licensing in certain limited circumstances and subject to certain restrictions.¹⁷⁸ A neutral third party, such as a governmental entity or the WTO, could set a reasonable royalty rate for the license. Such compulsory licensing insures that the patent owner

¹⁷⁶ See Leslie R. Goldberg, Comment, *Trade Policy and Election-Year Politics: The Truth About Title III of the Helms-Burton Act*, 18 J. INT'L L. BUS. 217, 221 (1997).

¹⁷⁷ However, U.S. law has allowed maximum price restrictions in the interests of the public. For example, municipal rent control ordinances that set a maximum rental price for residential rental housing have been upheld as constitutional in light of the fact that such laws were enacted to help remedy a shortage of low income rental housing. See generally RALPH E. BOYER, HERBERT HOVENKAMP & SHELDON F. KURTZ, *THE LAW OF PROPERTY* § 9.12 at 304 (4th ed. 1991) (lessor can be limited to a fair rate of return even if that return is less than rate of return that could be obtained in unregulated market). However, such ordinances typically do not mandate that a property owner must utilize real estate as residential rental property. Usually, they merely set maximum rental prices in the event the property is used for residential rental housing. Utilizing a similar approach to set a maximum resale price for certain drugs may be problematic. First, such an approach is a highly intrusive marketplace interference. Second, it may simply result in drug manufacturers refusing to sell their patented products in certain countries. Arguably, compulsory licensing, as discussed above, provides the same benefits but it is less intrusive in the marketplace.

¹⁷⁸ See SIGHAM, *supra* note 16, at 401-06. See also Sara M. Ford, Note, *Compulsory Licensing Provisions Under the TRIPs Agreement: Balancing Pills and Patents*, 15 AM. U. L. INT'L L. REV. 941 (2000). See also TRIPS Agreement, Article 31, *supra* note 8.

is compensated economically for use of her property rights.¹⁷⁹ At the same time, the drugs can be made available to more individuals in an effort to alleviate human suffering, for example, from HIV/AIDS. Arguably, it is imperative that the patent owner receives at least a reasonable royalty to prevent any diminution in the economic incentive to engage in research and development activities. Additionally, it must be recognized that the entire economic cost of dealing with making drugs available should not fall on the patent owner because her property is being used to solve a public health crisis that she did not create.¹⁸⁰

From an economic perspective, such compulsory licensing may provide additional revenue to the patent owner. If the high cost of the patented drug prevents significant sales in developing nations the effect of mandatory licensing in such countries may be significantly increased sales rather than lower priced drug sales offsetting higher priced sales.

Despite any increased revenue from such licensing several potential problems must be anticipated and planned for to prevent economic injury to the patent owner. First, quality control procedures must be in place to insure the licensee manufactures the patented drug properly. This

¹⁷⁹ Such mandatory or compulsory licensing is already used in the copyright area in the United States. *See, e.g.*, 17 U.S.C. § 115(a)(1) (2002). Additionally, United States copyright law provides for the Librarian of Congress to convene a panel to establish a schedule of licensing rates and terms in the absence of a privately negotiated license agreement. *See id.* § 115(D). *See also* Digital Performance Rights in Sound Recordings and Ephemeral Recordings, 66 FED. REG. 38324 (July 23, 2001) (U.S. Copyright Office announcement of arbitration to set rates/terms for compulsory license for digital audio transmissions of sound recordings). However, U.S. law has consistently rejected statutory authorization for compulsory licenses of patents. In contrast, many other countries provide for compulsory licensing of patents. *See* ROCHELLE COOPER DREYFUSS & ROBERTA ROSENTHAL KWALL, *INTELLECTUAL PROPERTY* 782-783 (1996).

¹⁸⁰ *See supra* note 161; *see generally* text accompanying *supra* notes 161-63.

protects both the health of recipients of the drugs and the marketplace reputation of the patent owner.¹⁸¹

An additional problem that may arise is exportation of the product made by the licensee. The licensee's production costs are less than the costs of the patent owner since the licensee does not have research and development costs, or marketing and advertising costs to recoup. This could enable the licensee to illegally resell a portion of her output for foreign sale such as in the United States or in other developed countries.¹⁸² Such sales can have the effect of depriving the patent owner of sales in developed nations due to the price differential. Careful monitoring and tracking of the licensee's output is essential to prevent this problem.

¹⁸¹ Protection of the reputation of the patent owner is important in light of the substantial investment companies make in creating highly recognizable trademarks that are used to market and sell their products. Trademark law has become increasingly important today in protecting this investment. *See generally* Lanham Act, 15 U.S.C. §§ 1051 – 1129 (2002) (the federal trademark statute). New protections have been added to the Lanham Act in recent years to protect trademark owners. *See, e.g., id.* § 1125(c) (providing for trademark dilution action for famous trademarks); *Id.* § 1125(d) (protecting trademark from cyber-piracy).

¹⁸² This is already a significant problem with consumer goods that embody intellectual property in the form of copyright and trademark rights. *See generally* Lisa Harlander, Note, *Exhaustion of Trademark Rights Beyond the European Union in Light of Silhouette International Schmied v. Hartlauer Handelsgesellschaft: Toward Stronger Protection of Trademark Rights and Eliminating the Gray Market*, 28 GA. J. INT'L & COMP. L. 267, 267-70 (2000) (introducing the gray goods problem); *see also* Elin Dugan, Note, *United States of America, Home of the Cheap and the Gray: A Comparison of Recent Court Decisions Affecting the U.S. and European Gray Markets*, 33 GEO. WASH. INT'L L. REV. 397 (2001). Such goods are typically called parallel imports or gray goods. *See* *Parfums Givenchy v. C & C Beauty Sales*, 832 F. Supp. 1378, 1382 n.1 (C.D.Ca. 1993) (“‘Gray market’ goods are goods that are intended to be sold outside the United States but which are imported into this country without the consent of the owner of the United States trademark or copyright associated with the good.”). *See also* Margreth Barrett, *The United States' Doctrine of Exhaustion: Parallel Imports of Patented Goods*, 27 N. KY. L. REV. 911 (2000) (discussing gray goods with regard to patented products). *See generally* SINGHAM, *supra* note 16, at 407-13 (discussing the negative effect gray goods market can have on patent rights).

3. *Property Right Restrictions*

Patent law does not allow protection for all inventions.¹⁸³ Certain types of inventions, such as a new use for a known material or a known process, are not eligible for patent protection in the United States.¹⁸⁴ This is true despite the fact that such new use may be of great benefit to society. Additionally, surgical procedures are patentable in the United States as method claims.¹⁸⁵ However, the full range of available remedies for patent infringement is circumscribed when a patent on a medical or surgical procedure is violated.¹⁸⁶ Likewise, the TRIPS Agreement specifically allows signatories to exclude from patent protection certain inventions that are protected in other countries.¹⁸⁷ Additionally, it also provides for the withholding of patent rights

¹⁸³ Additionally, certain important discoveries are not patentable even though they can have substantial importance. For example, discovery of a new mineral, plant or mathematical equation is not patentable subject matter. *See* *Diamond v. Diehr*, 450 U.S. 175, 185, 101 S. Ct. 1048, 1056 (1981). Additionally, laws of nature, natural phenomena, and abstract ideas are unpatentable. *See id.*; *see also* *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368, 1373 (Fed. Cir. 1998).

¹⁸⁴ *See* *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1376 (Fed. Cir. 2001) (holding that a newly discovered result of old process directed to same purpose is not patentable); *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) (“discovery of a new property or use of a previously known composition, even when that property and use are unobvious from the prior art, can not impart patentability to claims to the known composition”). However, it should be noted that a new use of an old machine or composition of matter may be patentable as a new process if the method involves using the machine or composition of matter in a new and non-obvious manner. *See* *Loctite Corp. v. Ultraseal, Ltd.*, 781 F.2d 861, 875 (Fed. Cir. 1985); *see also* 35 U.S.C. § 100(b).

¹⁸⁵ *See* MAURER, *supra* note 80 at 1082.

¹⁸⁶ *See* 35 U.S.C. § 287(c)(1) (2002).

¹⁸⁷ *See* TRIPS Agreement, Article 27, sec. 3, *supra* note 8 (stating that diagnostic, therapeutic and surgical methods for treatment of human or animals, and certain plants and animals may be excluded from patent protection). In contrast, U.S. patent law allows patents on surgical methods and on engineered animals. *See also* MAURER, *supra* note 80 at 1082 (surgical

for inventions that are necessary to protect human life or health.¹⁸⁸ In light of this, the law already embodies the concept of excluding certain types of inventions from being eligible for patent protection. Nevertheless, the economic effect of excluding certain inventions from being patent eligible must be considered. Denying such property rights in certain countries may result in less potential revenue being available which could adversely affect research and development activities.

4. *International Subsidies*

The marketplace tends to solve distribution problems especially if dissemination to new markets will be potentially profitable. Nevertheless, in certain limited circumstances, a problem, such as the HIV/AIDS epidemic, is so serious that marketplace solutions may not be adequate. Consequently, such a public health problem can be viewed as an exceptional or emergency situation requiring a large infusion of funds. Such funds could be provided by developing countries to an international organization such as the United Nations. The United Nations could then utilize the funds to purchase and distribute appropriate medicines where they are needed in an effort to minimize human suffering.

Although such a solution seems laudable on its face implementation might be problematic. First, insertion of a quasi-governmental organization into the process creates the potential for the development of a bureaucracy that can expend large amounts of capital on administrative overhead. This is a problem that tends to occur in most large entities and

procedures are patentable); U.S. Patent No. 4,736,866 (issued April 12, 1988) (awarding a patent on a genetically engineered mouse).

governments. Additionally, having an international organization deal with the HIV/AIDS problem may be resented by developing countries that desire to deal with the problem internally. Likewise, the path from developing to developed country requires a nation to learn how to deal with and solve its problems including public health issues.

CONCLUSION

Recognition of intellectual property rights must reflect an understanding that providing for potential economic reward, such as in the form of patent rights, is a necessary evil to insure investment in research and development activities. Additionally, it must also be recognized that such economic rewards may deprive individuals in developing nations from access to patented technology. The challenge is to find a balance between these competing interests.

The HIV/AIDS epidemic presents a current real-world situation that requires balancing economic property rights in patented drugs with a serious health threat to a substantial number of people. This epidemic has disproportionately affected developing nations. Therefore, to allow patent law to bar afflicted people from treatment in developing nations is unconscionable. Nevertheless, the long-term consequences of limiting potential economic gain on intellectual property, in the form of new drugs, must be considered. Such a limitation can reduce investment in research and development activities over the long-term that can result in fewer new drugs being developed. This very likely may result in more human suffering over time.

The best solution involves some type of governmental intervention since the free market will not accomplish adequate distribution of the necessary drugs to developing nations. Merely

¹⁸⁸ See TRIPS Agreement, Article 27, sec. 2, *supra* note 8.

taking patent rights via the eminent domain power does not reflect a satisfactory balance between preventing both short term and long-term human suffering. The consequent economic loss to patent owners will reduce long-term investment in research and development. However, if a nation taking patent rights pays the economic value of those rights, from an economic perspective, the patent owner is made whole. Based on this the use of compulsory licensing provides the best balance between the various competing interests. It helps alleviate human suffering while compensating the patent owner for the use of her property. Additionally, it is consistent with the TRIPS Agreement that recognizes the concept of compulsory licensing. Nevertheless, compulsory licensing is a clear market intrusion so its use should be limited to emergency situations such as the HIV/AIDS crisis in developing nations. This is critical to maintain the maximum degree of competition while minimizing any problems from parallel importation.

