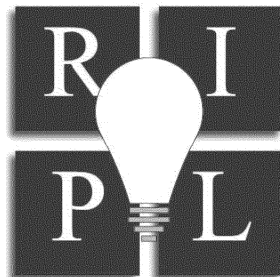


THE JOHN MARSHALL REVIEW OF INTELLECTUAL PROPERTY LAW



PATENT LAW IN THE ANTITRUST SCOPE: BETWEEN SOCIAL ADVANCEMENT AND COMPETITION
IMPINGEMENT

YANIV GAL

ABSTRACT

In the past couple of decades, many scholars have debated the worthiness of the limited monopoly that patent law provides. The widespread attitude has always been, since the progress of the technological era, that in order to stimulate inventors and possessors of knowledge to embody their knowledge by innovative products, and produce ameliorations into society, they should be given strong proprietary rights over their innovative information and ideas.

With the rise of the economic analysis of law, dissident opinions have been starting to emerge, evoking the social damage absorbed due to the current patent system monopoly character in form of a deadweight loss imposed over economic surplus.

This article discusses the deficiencies and benefits that exist in the current legal system as they relate to limited monopoly of a patent. Next, it reviews some significant points of view by scholars who approached the aforesaid dispute via an economic analysis. Finally, this article suggests guidelines for a compromise efficient incentive for inventors, which will balance competition rationales.

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PATENT LAW IN THE ANTITRUST SCOPE: BETWEEN SOCIAL ADVANCEMENT
AND COMPETITION IMPINGEMENT

YANIV GAL*

*Shouldn't courts be able to use antitrust rules to identify an improper expansion of a patent monopoly?*¹

*[P]atent protection is the negative externality exchanged for the positive externality of progress in the patent bargain.*²

INTRODUCTION

Since the early to middle 1800s, English jurisprudence legitimated the United States ("U.S.") society's responsibility for granting rights over intellectual property and implementation of knowledge, by privileging inventors with exclusive commercial rights over their inventions.³ The social rationale for such a right is to stimulate those who possess knowledge and the relevant implementation know-how.⁴ Accordingly, society enjoys modernism and advancement in relation to technology (patents), media (copyrights), designs (design rights), and commercialization (trademarks).

U.S. common law recognizes the intellectual assets of those who implement their knowledge for consumption, as their own private property for a limited period of time, after which the implementation will become public property and the know-how will enter the public domain to be freely accessed.⁵ De facto implementation of knowledge, in relation to inventions ascribed to an exclusive patentee, will not provide the desired optimal outcome in supplying the demand.⁶ Thus, society will be temporarily deprived of almost any benefit, which stems from a public access regime.

* © Yaniv Gal 2011. Yaniv Gal is a practicing attorney licensed in Israel, specializing in commerce and insurance law. Yaniv graduated in law (LL.B) and business administration (B.A) from the Interdisciplinary Center (IDC) Herzliya, Israel, 2009. The author wishes to thank Dr. Assaf Jacob (IDC), for his professional orientation and encouragement.

¹ Robin C. Feldman, *The Insufficiency of Antitrust Analysis for Patent Misuse*, 55 HASTINGS L.J. 399, 400 (2003).

² Rudolph J.R. Peritz, *Rethinking U.S. Antitrust and Intellectual Property Rights* 15 (N.Y.L. Sch. Inst. for Info. Law & Policy, Working Paper No. 22, 2005), available at <http://ssrn.com/abstract=719745>.

³ Patent Act of 1836, ch. 357, 5 Stat. 117 (1836) (current version at 35 U.S.C. §§ 1-376 (2006)).

⁴ WILLIAM CORNISH & DAVID LLEWELYN, *INTELLECTUAL PROPERTY: PATENTS, COPYRIGHTS, TRADEMARKS AND ALLIED RIGHTS* 133-34 (Sweet & Maxwell 6th ed. 2007).

⁵ 35 U.S.C. § 154(a).

⁶ RICHARD A. POSNER, *ANTITRUST LAW* 16 (Univ. of Chicago Press 2d ed. 2001).

During the early and mid-1900s, American scholars developed antitrust doctrines under capitalistic trade perceptions.⁷ These antitrust doctrines recognize that by granting exclusive commercial rights, or providing the means for a party to attain or to amplify that party's market power (as will be explained further on, in Part IV.B.2), society will be harmed by decreasing the consumer's purchasing power.⁸ This leads to a reduction in the economic surplus; a greater reduction in the consumer's surplus than in the manufacturer's surplus.⁹

In order to balance the opposing effects of patent and antitrust laws, certain intersections between those laws have necessitated that the laws be amended. Such amendments include: excluding patentees from antitrust doctrine directives; enabling patentees to trade as sole traders (monopolists);¹⁰ permitting patentees to engage in pricing methods in disregard for other manufacturers;¹¹ and forbidding patent holders from not occupying or developing their patent while enjoying exclusivity, commonly referred to as the "patent misuse" doctrine¹²—as will be discussed in Part IV.B.6.

Eventually, and in spite of the aforesaid, the equilibrium obtained between the patentee's supply and the consumer's demand, under micro-economic analysis, does not yield maximum output per price.¹³

As we shall see, a clear distinction between both mechanisms is unsuitable, and results in either: harming social progress by creating a barrier between market segments which causes a reduction in gross welfare (an impact over outputs and quantities of innovation consumed); or diminishing the innovative progress of the implementation of information (impacting the advancement and quality of the patented knowledge).

This article will attempt to clarify the importance, and propose guidelines for, a model binding both patent law rights and antitrust law doctrines in order to perfect social welfare enhancement. Further, the article will review whether it is justified to privilege patentees, by excluding others from engaging in research and development of their patents, from the standpoint that the patentee should be incentivized in order to produce an advanced solution as soon as possible. If such a justification exists, then what amount of disruption to competition will be desirable before casting a burden over society, harming the system of free competition?

⁷ See, e.g., Sherman Antitrust Act, ch. 647, § 1, 26 Stat. 209 (1890) (current version at 15 U.S.C. §§ 1–7 (2006)) (limiting cartels and monopolies to protect consumers from competitive practices that advance the cost of the consumer); Clayton Antitrust Act, ch. 323, §§ 1–26, 38 Stat. 730 (1914) (current version at 15 U.S.C. §§ 12–27 (2006)) (adding further substance to the U.S. antitrust law regime by seeking to prevent anticompetitive practices in their starting point); Robinson-Patman Act, ch. 592, § 1, 49 Stat. 1526 (1936) (codified as amended at 15 U.S.C. § 13 (2006)) (prohibiting anticompetitive practices by producers, specifically price discrimination).

⁸ See *infra* Part IV.B.

⁹ Donald Dewey, *Antitrust and Economic Theory: An Uneasy Friendship*, 87 YALE L.J. 1516, 1520 (1978).

¹⁰ See *In re Ciprofloxacin Hydrochloride Antitrust Litig.*, 261 F. Supp. 2d 188, 248 (2003).

¹¹ See *id.*

¹² 35 U.S.C. § 271(d) (2006); see *infra* Part IV.B for a discussion on the patent misuse doctrine.

¹³ POSNER, *supra* note 6, at 16.

I. ANTITRUST LAW—AN INTRODUCTION

A. Overview of Antitrust Law

Antitrust law, manifested in the Sherman Antitrust Act of 1890 (“Sherman Act”) prohibits all kinds of trusts whether by contract, syndication, monopolization, attempts at monopolization, and conspiracies, that restrain trade or commerce, either positively acting or by omission.¹⁴ The essence of antitrust law is to forbid cartelization by firm collaboration, monopolization, or attempting to monopolize by merger, and at all, as inchoately ordained.¹⁵ This goal is phrased in sections one and two of the Sherman Act, forbidding as follows:

[e]very contract, combination *in the form of trust* or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.¹⁶

Every person who shall *monopolize, or attempt to monopolize, or combine or conspire* with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations.¹⁷

The primary concern of the Sherman Act, as it was laid in front of its framers was to protect small businesses from low pricing competition of trusts, due to the inherent disadvantage of the former.¹⁸ By form, the Sherman Act, as other antitrust legislation from the nineteenth century, had little to do with allocative efficiency; nevertheless, before that era, antitrust policy had been of no major importance.¹⁹ Therefore, in order to clarify and enhance antitrust policy, Congress has amended antitrust doctrines,²⁰ by inserting a standard of preserving competitive pricing, accordingly setting the derived rule against price fixing.²¹

These amendments bind antitrust laws with efficient economic parameters, rather than small businesses’ and consumers’ concern for wealth and welfare. Therefore, it becomes apparent that all cartels, collusive pricing, and other ways of price-fixing are unequivocally illegal due to their inefficiency.²²

The implementation of combining antitrust law with parameters, like with efficiency in *Socony-Vacuum Oil*,²³ regards any attempt to control market prices (i.e.,

¹⁴ 15 U.S.C. §§ 1–7 (2006).

¹⁵ See *infra* Part I.B (discussing the private enforcement of antitrust law by the Clayton Act).

¹⁶ 15 U.S.C. § 1.

¹⁷ *Id.* § 2

¹⁸ See POSNER, *supra* note 6, at 34.

¹⁹ See *id.* at 35.

²⁰ See *id.*

²¹ See *United States v. Trans-Mo. Freight Ass’n*, 166 U.S. 290, 339 (1897).

²² See POSNER, *supra* note 6, at 36 (explaining that the objectivity of the ruling of the illegality of price fixing was to annul the reasonable basis of price fixed price agreements or cartels, therefore resulting that the “reasonable price” is that which constitutes a competitive price).

²³ *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150 (1940).

price fixing), as a breach of antitrust law, without having to show a true effect over the market, or probable success.²⁴ Therefore, all types of monopolies, attempts to monopolize, cartelization and any method formed in purpose or merely contributing to influence market prices, are ostensibly inefficient and legally bound, they undermine free competition rationales and competitive pricing trade.²⁵ Moreover, the U.S. Supreme Court's interpretation of the Sherman Act holds that any mechanism having the effect of raising, depressing, fixing, pegging or stabilizing prices as illegal.²⁶ This has been true even if such actions do not necessarily result in a monopoly but are merely aimed to award unequal distribution power in the market—such as conspiring to control market prices.²⁷

In 1914, the second chapter of antitrust law was written, well known as the Clayton Antitrust Act (“Clayton Act”).²⁸ Section 2 consists of, among other things, prohibitions on price discrimination,²⁹ and section 3 contains prohibitions on tying in exclusive dealing.³⁰ Both courses of action can diminish competition or manifest in

²⁴ *Id.* at 224.

²⁵ *Id.* at 223. Justice Douglas stated that, “[m]arket manipulation in its various manifestations is implicitly an artificial stimulus applied to . . . market prices, a force which distorts those prices, a factor which prevents the determination of those prices by free competition alone.” *Id.* (emphasis added).

²⁶ *Id.* at 221.

²⁷ *Id.* In Justice Douglas's definitive words: “Any combination which *tampers with price structures . . .*” disregarding the significance of a true potential for influencing the market. *Id.* (emphasis added). Thus, controlling or acting to control market prices, indistinctively constitutes an illegal trust, breaching the competitive system protected under Sherman Act. *Id.*

²⁸ 15 U.S.C. §§ 12–27 (2006). See also Federal Trade Commission Act, 15 U.S.C. § 5(a)(1) (2006) (forbidding “*unfair methods of competition*”).

²⁹ 15 U.S.C. § 13(a). Section 2 states:

It shall be unlawful for any person engaged in commerce, in the course of such commerce, either directly or indirectly, to *discriminate in price between different purchasers of commodities of like grade and quality*, where either or any of the purchases involved in such discrimination are in commerce, where such commodities are sold for use, consumption, or resale . . . and *where the effect of such discrimination may be substantially to lessen competition or tend to create a monopoly* in any line of commerce, or to injure, destroy, or *prevent competition* with any person who either grants or knowingly receives the benefit of such discrimination, or with customers of either of them: *provided*, [t]hat nothing herein contained shall prevent differentials which make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered . . . where it finds that available purchasers in greater quantities are so few as to render differentials on account thereof unjustly discriminatory or promotive of monopoly in any line of commerce.

Id. (emphasis added).

³⁰ *Id.* § 14. Section 3 states:

It shall be unlawful for any person engaged in commerce, in the course of such commerce, to lease or make a sale or contract for sale of goods, wares, merchandise, machinery, supplies, or other commodities, whether patented or unpatented, for use, consumption, or resale . . . or fix a price charged therefore, or discount from, or rebate upon, such price, on the condition, agreement, or understanding that the lessee or purchaser thereof *shall not use or deal in the goods, wares, merchandise, machinery, supplies, or other commodities of a*

monopolies. Section 2, which had been amended to the Clayton Act in 1936 (hereinafter will be referred to as part of the Act), is also known as the Robinson-Patman Act.³¹ Similar to the Sherman Act, Congress's intention was to secure the market shares of small businesses and prohibit price discrimination.³² Some may say it concerns mainly *distributional justice* rather than market efficiency.³³

B. The Antitrust Standard

Exercising the full rigor of the law, regarding antitrust rationales, requires an efficient enforcement mechanism, which can generate a cause of action whenever a breach of the Sherman or Clayton Act statutes occurs, either by an individual or by a firm, engaging or conspiring to engage in any illegal trust.³⁴

The Sherman Act prohibits the achievement of the restraint of trade, monopolies, cartels, and other forms of trust.³⁵ The Clayton Act, as amended, will be enforced where measures that might have been taken which might lessen competition, or tend to create monopoly power.³⁶ In other words, antitrust law prohibits both firms or individuals from engaging in predatory practices that are meant to exclude competition, thus gaining extra "market power"³⁷ instead of practices that naturally flows from the firm's performance. However, the fact that a firm has monopoly power does not mean that the law should prevent it from competing.³⁸

The Sherman Act, joined with the Clayton Act, provide the U.S. government the power to break up trusts in restraint of trade, and maintain an effective free-

competitor or competitors of the lessor or seller, where the effect of such lease, sale, or contract for sale or such condition, agreement, or understanding may be to substantially lessen competition or tend to create a monopoly in any line of commerce.

Id. (emphasis added).

³¹ Robinson-Patman Act, ch. 592, § 1, 49 Stat. 1526 (1936) (current version at 15 U.S.C. § 13 (2006)); see *supra* note 7 and accompanying text, and *infra* Part IV.B for the relevant methods of price discriminating in our context.

³² See *infra* Part IV.B (discussing the relevant methods).

³³ See CLIFFORD A. JONES, PRIVATE ENFORCEMENT OF ANTITRUST LAW IN THE EU, UK AND USA 12 (Oxford Univ. Press 1999).

³⁴ United States statutes which enable enforcement of antitrust law include section 7 of the Sherman Act, sections 4(a) and 10 of the Clayton Act, and the Federal Trade Commission Act. See *infra* Part IV.B.

³⁵ CLIFFORD, *supra* note 33, at 10 (noting that courts have established a "rule of reason" under which only an *unreasonable restraint* of competition is unlawful).

³⁶ *Id.* These two statutes, which make up the antitrust standard, should not to be read in isolation. Instead, they should be read together as clarifying the defense which can be granted to the potential competitor-manufacturer, and in particular small businesses, by specifying causes of action, in both civil and criminal law (Sherman Act and Clayton Act, respectively), *impelling reasonability factor* into the standard. *Id.* See POSNER, *supra* note 6, at 195.

³⁷ See POSNER, *supra* note 6, at 195–96.

³⁸ *Id.* at 196. The antitrust standard does not constitute a sweeping taboo over gaining market power, however it imposes a *prudence duty* in English jurisprudential interpretation, which is embraced in this article regarding the standard. See *infra* Part I.C.

competition market, or at least to reduce potential damage to the economic surplus (see explanation at Part IV.B), stemming from excessive market power.³⁹

The antitrust standard, drawn by the Sherman Act and the Clayton Act, as amended, is bound to market efficiency, and comprises the cornerstone of the new modern age common law standard, as manifested by western legislation. It will be used as a basic assumption for this article, regarding efficiency analysis of competition rationales.

C. A Statutory Prudence Duty

English law, which imposes a suitable and expedient duty of prudence, favors the protection of an integrated commerce and competition model.⁴⁰ Competition law (the English parallel to U.S. antitrust law) averts the use of a dominant position in a market, similar to what was referred above, in part, as “market power,” for certain, anti-competitive purposes.⁴¹ The outcome of such ‘use’ will result in a breach of section 36 of the New Zealand Commerce Act 1986.⁴² The section of the Act that deals with misuse of substantial market power, is as follows:

No person who has a *dominant position in a market* shall use that position for the purpose of --

- (a) *Restricting the entry* of any person into that or any other market; or
- (b) Preventing or deterring any person from *engaging in competitive conduct* in that or in any other market; or
- (c) Eliminating any person from that or any other market.⁴³

Yet, it should be mentioned that sub-section two of the Act restricts any enforcement of the Act, by virtue of the New Zealand statute, against a protected patent.⁴⁴ One of the essential inquiries of the Act is whether or not the party in question has a *dominant position in the market*.⁴⁵ Hence, a breach of the Act will

³⁹ See *e.g.*, *Brown Shoe Co. v. United States*, 370 U.S. 294, 343–44 (1962). In this context, antitrust law, especially the Clayton Act, is not dedicated solely to the protection of competitors and firms, rather protecting competition at whole, by decentralizing firms’ market power and preserving an “effective competition”. *Id.*; see also *infra* Part IV.B (explaining the potential damage to economic surplus).

⁴⁰ For this context, we examine New Zealand commerce law, as a derivative from English jurisprudence.

⁴¹ See Section 36 of the Commerce Act 1986 (N.Z.) [hereinafter N.Z. Commerce Act].

⁴² *Id.*

⁴³ *Id.* (emphasis added).

⁴⁴ *Id.*

⁴⁵ *New Zealand Magic Millions Ltd. v. Wrightson Bloodstock Ltd.* (1989) NZLR LEXIS 720, (HC) *4.

occur when competition, actual or potential,⁴⁶ is harmed by a party, while keeping in mind, that the Act should be interpreted in a practical sense.⁴⁷

II. MONOPOLY ADVANTAGES

A. Does Exclusivity Have Social Worth?

1. Introduction

The main question, regarding the social interest in allowing an individual or a single firm to enjoy monopoly power, should be whether the monopoly promotes innovativeness and efficiency. As Professor Posner describes in his book, the question should be answered *empirically* rather than decisively.⁴⁸ This article will face the debate over the monopoly term of patentable innovations, looking first at a normative point of view, which examines the economic justifications—the contribution to social advancement⁴⁹—via the patent in dispute.⁵⁰ Next it will look at the consequences of the monopoly from a descriptive aspect.⁵¹ The discussion will start by understanding the grounds for this debate.

2. The Dispute

Take two regimes, one which allows an individual to effectively influence the market and market prices, and another which prohibits any sort of interference with free market competition. In which of these two regimes, will the inventor be more stimulated to invent? In which of them, will society achieve optimal innovative progress: where the prices for innovations are fixed and the inventor enjoys monopoly incentives, or where pricing is competitive, not granting inventors an option to influence the market? The overlap between antitrust law and patent law will be discussed when examining the cost-efficiency (i.e. social efficiency) of the patent regime.

⁴⁶ *Id.* at *5; N.Z. Commerce Act, § 3(1) (defining ‘competition’ as “workable or *effective competition*”) (emphasis added).

⁴⁷ *Magic Millions Ltd.*, (1989) NZLR LEXIS 720 at *5.

⁴⁸ POSNER, *supra* note 6, at 20.

⁴⁹ See *infra* Part III.B (explaining how social advancement and innovative information can expand the public domain).

⁵⁰ See generally Eunice A. Eichelberger, *Brining of Patent Infringement Suit as Violation of Section 1 and 2 of Sherman Act*, 62 A.L.R. FED. 203 (1983) (discussing the interplay of patent rights in the antitrust context).

⁵¹ See *infra* Part IV (discussing whether the diminution of free competition around the patent affects social welfare, substantially harming the competition variables, and affects whether the loss of a free competition around the patented information (the deadweight loss described at Figure 3 and Figure 4, below as deadweight loss), is being undertaken, eventually, by society.

In addition, the following two interlaced questions should be in mind while trying to balance the patent system with the antitrust standards previously discussed in Part I.B, preserving competition rationales: (1) does monopoly power undoubtedly promote innovativeness, or rather subjected to every case (or patentable category), can we find an empirical algorithm that determines ad-hoc directives (the normative question); and (2) what are the expectations of promoting innovation by granting monopolization security (the descriptive question)?

What should the economic meaning be for the result drawn from question two? In the sense of cost-effectiveness, what will the free market suffer from in favor of the above advantages? The article will discuss those questions extensively in Part IV.B.

3. Cost Reduction

By assuming that patented products benefit in direct proportion from lawful trusts (in this case, monopoly power), one wrongfully ignores the presumption by which a manufacturer, acting in a competitive market, expects a greater return on investment (“ROI”) for his effort, than does a single inventor, enjoying monopoly power.⁵² Therefore, the manufacturer will be more stimulated to both reduce costs and enhance quality while embodying its knowledge. On the other hand, by enabling others to promptly copy innovations without carrying the burden of research and development (“R&D”) costs, generates an unjust situation,⁵³ whereas the inventor may not be able to recoup those costs, which leads to inefficiency, which may disincentive inventors to innovate.⁵⁴ From the consumer’s point of view, by limiting the monopoly inventors will be forced to reduce costs, in order to match competitive pricing.

Resultantly, cost reduction is more likely to take place under free competition than under patent monopoly.⁵⁵ Thus, it can be deduced that the more significant the patent prerogative is, the more market price will rise. It can also be concluded that a competitive manufacturer will seek to enhance ROI more than an exclusive manufacturer, *inter alia* by reducing R&D costs, in order to gain revenues as soon as possible.

4. Quality Enhancement

By granting monopoly power, society aims for the market to benefit in quality.⁵⁶ The measures applicable to enhancing quality in the market are: entrepreneurship

⁵² POSNER, *supra* note 6, at 18 (explaining that the reason for differentiation between the expected return, stems from a micro-economic explanation regarding the effect that monopoly has over the supply and demand model).

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ Ariel Katz, *Making Sense of Nonsense: Intellectual Property, Antitrust, and Market Power*, 49 ARIZ. L. REV. 837, 840–41 (2007).

⁵⁶ See *infra* Part IV.A (describing “quality” as one of the competition variables).

incentives; the ability to set high standards; and the protection of inventors *ex post*.⁵⁷ Accordingly, society desires that improvements will enter the market in the most efficient way by the original inventor. Notwithstanding, it is evident that the market will be damaged in quality when more advanced, better skilled and resourced market players, are excluded from participation in the development, or use of, patented technology.⁵⁸

Nonetheless, monopolists will not be obliged to consult with such competent market players, as mentioned above, for enhancing qualities *ex ante* via business cooperation. As explained, a competitive market might diminish incentives to invest in R&D, thus having a reduction in quality while at the same time encouraging cooperation among market players. This concept holds true for the benefit of the consumer in either quality or price factors.

5. Copying Preventing Costs

By obtaining the patent right, the innovator is less encouraged to protect his innovation from being copied or reverse engineered.⁵⁹ Such protections are commonly a cause for additional R&D costs among competitors, which in turn are passed on to the consumer.⁶⁰ Moreover, such protections are a cause for extending the R&D period, thereby delaying the time when society may enjoy the innovation.⁶¹

Additionally, preventing inventors from patenting their innovations might encourage them to look to the protection of trade secret law for protection.⁶² Trade secret law holds less incentive, from society's viewpoint, than patent law.⁶³ Because the inventor avoids any duty of disclosure in trade secret law, knowledge is withheld from potentially expanding the public domain.⁶⁴

An unfavorable outcome obtained by society, is that the inventor's practice of protecting an invention as a trade secret raises R&D costs, which eventually will be impressed upon the consumer.⁶⁵ Nonetheless, in some cases the inventor might prefer addressing trade secret law, which can result in extending the protection term

⁵⁷ See generally Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 348 (1967) (introducing the function of possessing property rights, including intellectual property possessions); see also *infra* Part III (discussing incentives and protection of innovation).

⁵⁸ See *infra* Part IV.A; see also Feldman, *supra* note 1, at 400 (explaining the importance and relationship of market power as it relates to both patent and antitrust law). See also the example at *infra* Part IV.B.6.b.

⁵⁹ Andrew Beckerman-Radau, *The Choice Between Patent Protection and Trade Secret Protection: A Legal and Business Decision*, 84 J. PAT. & TRADEMARK OFF. SOC'Y 371, 398–99, 401–02 (2002).

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.* at 377 (explaining why some inventors will elect protection under trade secret law rather than patent law).

⁶³ See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 494 (1974) (Marshall, J., concurring).

⁶⁴ *Id.*

⁶⁵ See Beckerman-Radau, *supra* note 59, at 397–99 (discussing the costs of maintaining secrecy).

well beyond the patent monopoly.⁶⁶ This may draw away from the antitrust standard, damage welfare in terms of quality, and prevent the innovation from the public domain.⁶⁷

III. PATENT LAW PROTECTIONS: CAUSES AND RATIONALIZATIONS

A. Introduction

Patent law rights are justified as long as they enhance welfare, through encouraging inventors to seek knowledge over the patent object, and implement products embodying their knowledge⁶⁸

While the social value of the information exceeds its R&D costs, the benefit to the developer will be less than the benefit to society.⁶⁹ This leads to the developer selling to fewer consumers, as the embodiment of the information could be cheaply copied.⁷⁰ Simultaneously inventors are stimulated to produce innovations in short time for public consumption and utilization, before the patent term will be over.⁷¹ Eventually, the innovation will enter the public domain, henceforth extending a competitive market, naturally concluding with output growth,⁷² and quality enhancement.⁷³

⁶⁶ *Id.* at 383.

⁶⁷ *Id.* at 383–84.

⁶⁸ See *infra* Part III.B (discussing the social welfare justifications of patent law).

⁶⁹ See Demsetz, *supra* note 57, at 348–49 (explaining the benefit of society under property rights “the role of property rights in the internalization of externalities”); see also STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 138 (Belknap Press 2004) (discussing the social value of information).

⁷⁰ See SHAVELL, *supra* note 69, at 138. In exploring the social value of information, Shavell explains that:

[i]f, however, information can be copied at low cost by those who come to possess it, the person who first develops information will not be able to sell it to very many buyers: Most buyers will be able to disseminate or resell the information themselves. *Id.* As a consequence, the reward to a person who creates information will tend to be less, perhaps substantially less, than its social value.

Id.

⁷¹ Peritz, *supra* note 2, at 6 (explaining that the twenty-year patent term “puts a cap on the private right to exploit the patent, adding a sense of urgency to the development process.”).

⁷² See Feldman, *supra* note 1, at 400. “Patent rights are offered to induce inventions whose creation and *disclosure* will benefit to society.” *Id.* (emphasis added). This is accomplished by seeking the entry of the innovation into public domain, through full disclosure while filing for patent. *Id.*

⁷³ See Jay Dratler, *Trade Dress Protection for Product Configurations: Is there a Conflict with Patent Policy?* 24 AIPLA Q.J. 427, 438, 440 (1996) (emphasizing the importance of the full disclosure element for the sake of enriching society with new information regarding the patent). All of those outcomes are to be read as *one* cause which is derivative to the public domain provision and have and lead to a joint venture.

Given this assumption, which is used as a premise for this article, next is an examination of the *statutory means* offered under patent law, and their effect on social welfare.

B. Growth of Social Welfare

Stimulating innovators to produce goods embodying innovative knowledge they possess, to wit, new solutions to present problems, enhances social welfare by presenting advanced outputs, and improving quality (notwithstanding quality of life). Before such stimulation, prior solutions to problems were less efficient than the improvement disclosed by the inventor.⁷⁴ In the long term, after the innovative information enters public domain, society benefits from additional social enhancement, in the form of price reduction in a competitive market.⁷⁵

Validation of the above presumption is found by studying the U.S. Constitution, justifying the patent system (as well as other IP regimes) as a way to “promote the progress of science” which indicates the need and desire for expanding global knowledge.⁷⁶ To wit, the privilege granted by patent law should be designed to implement and achieve the above goal, as well interpreted, inasmuch as widening the public domain around the patent.⁷⁷

In the supply and demand model, this article refers to social welfare enhancement, as a growth of the economic surplus, and/or preservation or enlargement of the consumer surplus.⁷⁸ Such improvement will take place whenever the supply and demand graph moves down-right, thus the equilibrium obtained manifests lower prices and higher quantities.⁷⁹

C. Interaction with Market Functioning

As will be explored further on, due to the immense interaction patents have with various market functions, there should be no dichotomy between patent law privileges and the law which is in trust with commerce efficiency.⁸⁰

Patent law privileges patentees in a manner of *jus in rem*, in the sense of a negative right that provides exclusivity.⁸¹ Likewise, intellectual property rights

⁷⁴ If the presumption laid down here is false, meaning there is no elastically descending demand curve, the innovator, in the first place, will not be encouraged to produce.

⁷⁵ See, e.g., 35 U.S.C. § 112 (2006) (requiring – the “disclosure” and “enablement” requirements for filing a patent in order to enable other researchers to study the patent and know-how). This required disclosure, eventually allows other manufacturers to produce their own goods embodying the information after the patent expires, by that enhancing the consumers’ surplus. See also Figure 4 below, and *infra* Part V.

⁷⁶ U.S. CONST. art. I, § 8, cl. 8.

⁷⁷ *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480–81 (1974).

⁷⁸ See Figure 3 and Figure 4.

⁷⁹ Katz, *supra* note 55, at 868.

⁸⁰ See *infra* Part V.

⁸¹ Beckerman-Rodau, *supra* note 59, at 387; 35 U.S.C. § 154(a).

(“IPRs”) generate a positive market power.⁸² In this context, IPRs provide exclusivity to a single market player, which results in marketing a product embodying innovative information at prices higher than marginal costs.⁸³ This results in a less efficient economic balance,⁸⁴ thus negatively influencing market consumption.⁸⁵

In sum, patent law is doomed to interact with the market performance, within the limits of the statutory boundaries that are meant to keep market performance in order. Accordingly it is apparent that patent rights, as explained above, should not be broadened over other commercial legal aspects, including the antitrust standards, but instead, should be amenable to the market normative framework and delimitate only inasmuch necessary for encouraging inventors.⁸⁶

D. Economic Rationalization

In the manner of the conclusion expressed in the last Part, it should be emphasized that patents are nevertheless the means aimed to enhance welfare, and not the main object. Therefore, patent law should be used only in order to accomplish as such—favoring society rather than the inventor’s right for proprietary right to information.

As mentioned above, the most intuitive reason for having patent law rights is to support inventiveness. By granting the inventor, or the primal possessor of knowledge, exclusive rights over the marketing of the patentable innovation to come, R&D costs will not become irrecoverable due to unfair competition by developers which did not bear the same costs. If such unfair competition were allowed, it would drive market prices of the innovation toward marginal costs, and prevent the first inventor-investor to recoup its costs.⁸⁷

By expecting high returns for its innovation, the inventor will be encouraged to produce and transform its information.⁸⁸ This act enhances social welfare.⁸⁹ Whereas if the innovator’s expected ROI was subjectively low, it would not have engaged in R&D in the first place.⁹⁰

Figure 1 has been provided below to show supply and demand of an article in a reference frame of price vs. quantity. Due to the growth of supply in a specific market, where improvements have been made, the supply graph moves from S_0 to S_1 ; and the market’s aggregate demand equilibrium, will be achieved (in short-medium

⁸² Katz, *supra* note 55, at 841–43.

⁸³ *Id.* at 851–53.

⁸⁴ See *infra* Part IV.A and Figure 3, below.

⁸⁵ Katz, *supra* note 55, at 856–57.

⁸⁶ *Id.* at 868. See *infra* Part IV.B (discussing the implications of patent law provisions interfering with market efficiency).

⁸⁷ WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 13 (Harvard Univ. Press 2003) (noting the *dynamic* benefit of granting property rights—the traditional economic explanation for intellectual property rights).

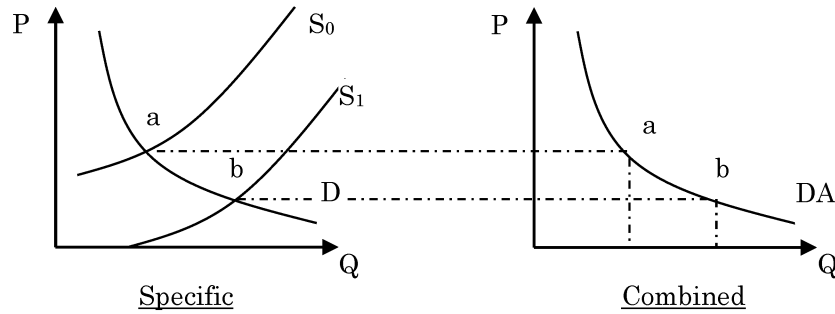
⁸⁸ See SHAVELL, *supra* note 69, at 138.

⁸⁹ *Id.* at 138–40, 143.

⁹⁰ Katz, *supra* note 55, at 860.

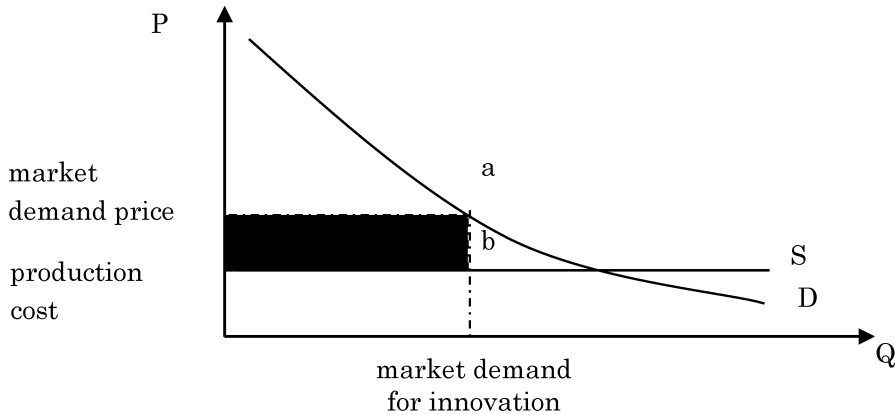
time range) with higher quantities and lower prices than before (the movement from point 'a' towards 'b' on the DA graph above).⁹¹

Figure 1



As shown below, in Figure 2, new innovations which are market-required and have demand in the market should be examined with regard for their social values which is the amount by which social welfare will rise. The optimal production level, can be calculated by the area bounded by a product's market price valuation and the production cost in the market demand quantity for that valuation.⁹² Nonetheless, any price or quantity combinations that will not produce the exact (rectangular) area between the supply and demand curves in the limits of *b* to *a*, will not produce the optimal social value optimal social value of consumption.⁹³

Figure 2



⁹¹ *Id.*

⁹² Thomas Humphrey, *Marshallian Cross Diagrams and Their Uses Before Alfred Marshall: The Origins of Supply and Demand Geometry*, *ECON. REV.*, Mar.-Apr. 1992, at 8, available at http://www.richmondfed.org/publications/research/economic_review/1992/pdf/er780201.pdf.

⁹³ POSNER, *supra* note 6, at 16. Note that in this analysis, patented monopoly is not taken into account. For further clarification over monopoly inefficiencies see Part IV.A.2 and Figure 3, below.

Taking the preceding analysis into account, bearing in mind the convention laid down in Part III.C, this article concludes by noting that any ignorance of the economic model analysis, while granting exclusivity rights via patents, will harm social welfare growth potential—the *raison d'être* of both commerce law and patent law.

E. Summary

As explained previously, patent law was legislated to enhance social welfare, by enabling society to utilize knowledge embodied by patents, eventually having the knowledge enter the public domain and to be used freely—by creating a limited monopoly.⁹⁴ Hence, claims for the lack of privilege (i.e., exclusivity rights), where the social contribution is not justified, are not normally heard. However, both antitrust law and patent law aim for the same goal: expanding outputs and improvements for potential consumption.⁹⁵

First, this article sets and explains the perception by which the public domain is expanded, and sets a differential standard. Second, this article examines the extent of rights granted in terms of length (from a patent perspective, referring to time, scope, usage, etc.) and breadth (from a patentee perspective, tying arrangements, distribution limitations, etc.), and outlines an educated cost-efficient way of enforcing such rights. Finally, this article weighs the socioeconomic state of the current patent system. This article examines whether the amount of harm imposed on the consumer's surplus as a result of the patent monopoly (later refer to as the "deadweight loss") is indeed necessary to incentivize for innovation.

⁹⁴ Nicholas Economides & William Hebert, *Patent and Antitrust: Application to Adjacent Markets*, 6 J. TELECOMM. & HIGH TECH. L. 455, 456 (2008).

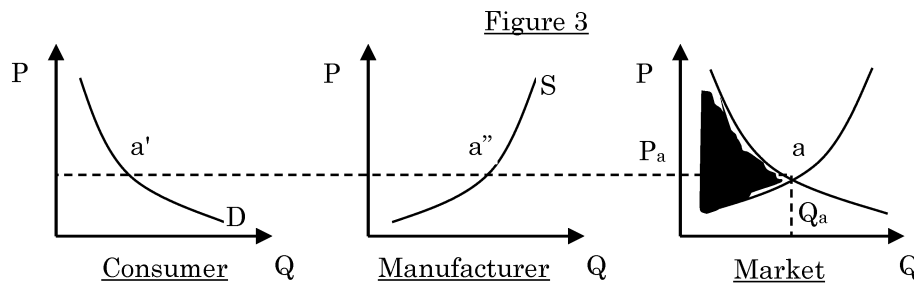
⁹⁵ Robert Pitofsky, *Comments on Lemley: An Introduction to IP and Antitrust*, 13 SW. J.L. & TRADE AM. 257, 258 (2007), available at http://heinonline.org/HOL/Page?handle=hein.journals/sjlta13&div=17&g_sent=1&collection=journal s.

IV. THE INEFFICIENCY OF EFFECTIVE PATENT PROTECTION⁹⁶—*LEX LATA**A. Part I: Explanation**1. Competition Variables*

This Part will focus on the impact of patent rights on competition variables, which are ascribed to micro-economic analysis in a consumer market, as follows: (1) outputs; (2) distribution; (3) pricing; (4) quality; (5) advancement; and (6) manufacturers in the market.

a. Graphical Display

According to Alfred Marshall's supply and demand model⁹⁷, market forces tend to balance, under free-competition. This balancing occurs where all six competition variables are at optimum level, in respect to producing social welfare, as shown below in Figure 3, and Figure 4.



Point (a') reflects the legitimate quantity and price variables in eyes of the consumer's preference, in order to maximize the consumer's surplus. Alternatively, point (a'') reflects the legitimate quantity and price variables in the eyes of the manufacturer's overall costs. While preserving free competition, both graphs meet at the market's equilibrium point (a) meaning that the economic surplus—the dashed

⁹⁶ An effective patent regime is that which provides *full monopoly rights* to the patentee (for intellectual property rights relativism, see *supra* Part II, whether explicit or deducted, in order to prevent others from replication in relation to trade and/or entitling damages whenever a patent infringement occurs. Therefore, this article will refer to patent law rights as exclusive or monopoly rights granted to the patentee. See, e.g., 35 U.S.C. § 154 (2006) (providing exclusivity regarding U.S. patent law); ROBIN JACOB ET AL., A GUIDEBOOK TO INTELLECTUAL PROPERTY 4 (Sweet & Maxwell 5th ed. 2004) (discussing exclusivity rights in relation to E.U. and U.K. law).

⁹⁷ See generally Milton Friedman, *The Marshallian Demand Curve*, 57 J. POL. ECON. 463, 464–67 (1949) (discussing methods of interpreting supply and demand curves to explain the relationship between consumer surplus and market competition); Humphrey, *supra* note 92, at 8 (explaining Marshallian curves in general).

area—is maximized, and quantity and price variables are optimized under the market's demand and supply constants.⁹⁸

b. Tendencies in Restriction of Competition

By restricting competition around a certain product, the market bears higher prices and fewer quantities of that product, diminishing the economic surplus.⁹⁹ In other words, the manufacturer will produce fewer goods embodying the patented information than the optimum (Q_a) and set higher prices (P_a) than that which will reduce consuming potential.¹⁰⁰ Consequently, this shift in production will lessen the ability for social advancement via adoption of the innovation.¹⁰¹

Take, for example, the selection of raw materials. A single manufacturer in a non-competitive market will be less motivated to seek cheaper and longer lasting raw materials, which will ultimately raise costs and retail prices. A manufacturer in a non-competitive market, not fearing competition in the market, can take advantage of delays in distribution, and will set its distribution array in a way which maximizes personal gain. This means that all market segments will be covered only after a certain time period (especially relevant to international patents) according to applied marketing doctrines.¹⁰²

The patentee enjoys a wide (perhaps even absolute) range of the market share, which not only gives an indication of its excessive market power, but also denies others from entering the market.¹⁰³

Aside from the supply and demand model, restriction of competition prevents other manufacturers from using the patented technology and developing that technology with more efficient manufacturing.¹⁰⁴ This is accomplished by producing the product in a shorter time period than the patentee, and with more production resources allowing a more efficient use of the technology.¹⁰⁵ Thus, for the duration of the patent term, the product embodying the invention will tend to remain of the same quality and value as the patentee is able to produce in the first place, and will not advance beyond the specific patentee's capabilities.¹⁰⁶

As opposed to a free-competition system where the consumer has the choice to purchase an improved product, in order to maximize profits in the long run, the monopolist (in this case, the patentee) can set a product's quality at a certain (low)

⁹⁸ See Humphrey, *supra* note 92, at 8.

⁹⁹ See *id.*

¹⁰⁰ See *id.*

¹⁰¹ See *id.*

¹⁰² See *generally id.* (discussing the social impact from various economic doctrines of supply and demand).

¹⁰³ See *e.g.*, Fisher & Paykel Ltd. v. Commerce Comm'n 1990 2 NZLR 731 (HC) 760 (discussing the importance of "entry barriers" in a competitive market).

¹⁰⁴ See Julie Turner, *The Nonmanufacturing Patent Owner: Toward a Theory of Efficient Infringement*, 86 CAL. L. REV. 179, 202 (1998).

¹⁰⁵ See *id.*

¹⁰⁶ See *id.* at 195.

level.¹⁰⁷ In summary, the advancement of the patented technology will therefore be slowed in relation to advancement in a freely-competitive market, and such advancement will be dictated by the monopolist.

Regarding the labor market, any anti-occupation or anti-competitive restraints, reduces a manufacturer's potential to gain revenues by competing in a restricted field that is part of the manufacturer's expertise.¹⁰⁸ Where employees are skilled, any exclusion from implementing their knowledge, by restraining them from engaging in R&D, will lessen society's potential to benefit from such skill. This impact is relevant to the labor market, yet it affects both employees and society.¹⁰⁹

When the output, distribution and market pricing variables together are controlled by a certain individual, either *de facto* or in potential, that individual (in this case, the patentee) enjoys an excessive amount of market power.¹¹⁰ Therefore, that individual produces at prices above marginal costs (at $(P_{(Q)a})$) as described below and in Figure 4).¹¹¹

For the context this article, the definition for the term 'market power', in relation to the antitrust standard, is related to micro-economic studies, and in general is: "the ability of a firm to set its prices above marginal cost."¹¹²

This article suggests that the patentee extensively maximizes its gains and enjoys market power extensively by setting three market variables for its own benefit: (1) the patentee will excessively set prices; (2) outputs will decrease; and (3) distribution will take place according to the economic abilities of certain market segments.¹¹³ These market segments are the ones that can bear the established price, not the ones based on societal needs. Thus, addressing having a single manufacturer holding market power constitutes an inevitable deadweight loss over the economic surplus, which is felt much more than the consumer's surplus.¹¹⁴

c. Holding Potential Competitors Out

Regarding all the aforementioned competition variables, an efficient patent system has definite implications for potential competitors both inside and outside the patent registry domain.¹¹⁵ Regardless of whether competitors may be more efficient than the patentee, the efficient patent system acts to lessen the competitors' ROI

¹⁰⁷ Josef Drexl, *Real Knowledge is to Know the Extent of One's Own Ignorance: On the Consumer Harm Approach in Innovation-Related Competition Cases*, 76 ANTITRUST L.J. 677, 695 n.68 (2010).

¹⁰⁸ See Turner, *supra* note 104, at 195, 202.

¹⁰⁹ *Id.*

¹¹⁰ LANDES & POSNER, *supra* note 87, at 378 (describing how price discrimination by individuals seller may expand output).

¹¹¹ *Id.* at 378–79.

¹¹² Katz, *supra* note 55, at 882.

¹¹³ See *id.* at 884–85, 887.

¹¹⁴ See *id.* at 873.

¹¹⁵ See generally LANDES & POSNER, *supra* note 87, at 295, 298–99 (discussing the potential for competition under patent law as compared to other areas of IP law).

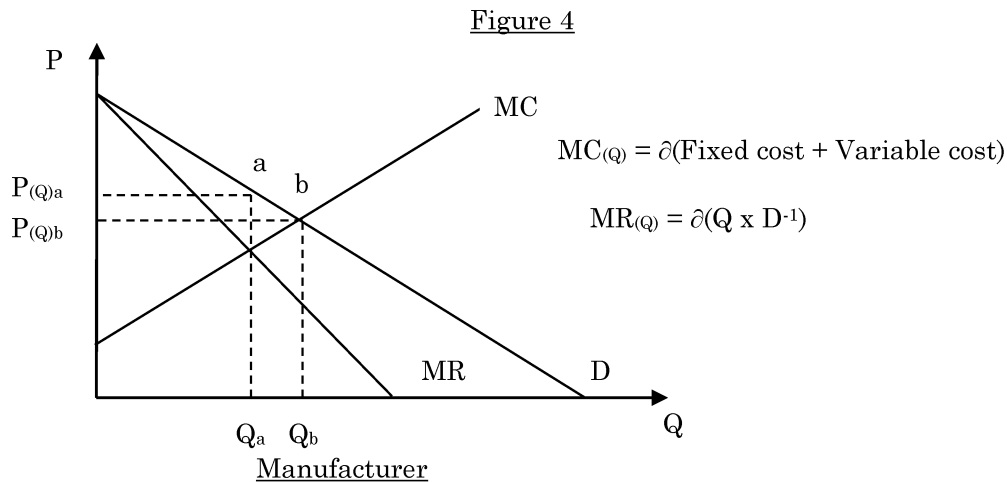
expectancy by reducing incentive for interfering, improving, and generally competing with the patentee.¹¹⁶

d. Competition's Contribution to Welfare

Validating technological progress and generating new products, where potential consumer demand exists, constitutes a major factor in increasing social welfare and the economic growth.¹¹⁷ Welfare is directly influenced from the competition variables, and any departure from their levels in a competitive market will have an impact in the form of a deadweight loss.¹¹⁸

Accordingly, statutory patent law rights harm competition variables, thus disturbing the optimal equilibrium in the supply and demand model, which imposes a deadweight loss upon the economic surplus.¹¹⁹ This deadweight loss is illustrated below in Figure 4.

2. Impacts on the Consumer's Surplus



As Figure 4 demonstrates, the equilibrium achieved under a monopoly, as described by point (a) exists at a point of small quantity and high prices. At point (a) the monopolist will produce goods only while its marginal revenue is greater than its marginal cost for production.¹²⁰ That is opposed to a free-competition market where balance is achieved at point (b) from the consumer's point of view.¹²¹ At point (b) the

¹¹⁶ See generally *id.* at 299–300 (explaining the difficulties and high R&D costs over a registered patent).

¹¹⁷ See *supra* Part III.B.

¹¹⁸ SHAVELL, *supra* note 69, at 138.

¹¹⁹ POSNER, *supra* note 6, at 80.

¹²⁰ *Id.* at 11.

¹²¹ *Id.* at 10.

equilibrium has a higher quantity and lower price. Here, production is set, not by the marginal revenue, but by demand meeting the marginal cost.¹²² In other words, under patent law, the manufacturer sees only its own revenue and costs, seeking demand only to the point where the manufacturer's own gain is maximized.¹²³

Under free-competition, from the consumer's perspective, the manufacturer sees both its costs and the market's demand and will continue to produce up to the optimum amount (Q_b), therefore maximizing the economic surplus.¹²⁴

The deadweight loss imposed on the economic surplus, by the analysis previously made, regarding a non-competitive market is expressed by the area:

$$\int_a^b [D(Q) - MC(Q)] dx. ^{125}$$

While the deadweight loss of the consumers' surplus is expressed by the rectangular area:

$$\frac{[P_{(Q)a} - P_{(Q)b}] \times (Q_b - Q_a)}{2}$$

Therefore, the amount of social welfare lost, in terms of the above deadweight loss, will be positive as long as: (1) the manufacturers' total production costs are in direct proportion to the quantity produced; and (2) the market's demand is not fixed.¹²⁶ These two assumptions will always be true while discussing a patentable innovation.¹²⁷

Moreover, even by assuming that in certain fields, such as where improvements are necessary on a frequent basis, patent law can be pro-competitive in the *short run*, due to its proprietary perspective.¹²⁸ Conversely, in the *long run*, it will tend to reverse, and harm welfare by restricting innovation preoccupation.¹²⁹

It should now be clear that the monopolist has no incentive to produce above what is necessary for maximizing its own gains, either in terms of higher quantity or lower prices. However, the market's demand reaches equilibrium at a higher quantity, it may still be economically worthwhile to achieve from the manufacturer's point of view (at point (b), in Figure 4). Hence, outputs under patent rights (at (Qb)

¹²² *Id.* at 11.

¹²³ The conditions for maximum gain are: (i) $MR_{(Qa)} - MC_{(Qa)} = 0$; (ii) $\partial[MR_{(Qa)}] - \partial[MC_{(Qa)}] < 0$. The amount "Q_a" (under monopoly) will now meet the demand and balance with the price "P_(Qa)."

¹²⁴ The economics' surplus is expressed by the integral $\int_a^b [D(Q) - MC(Q)] dx$. Where (b) is the break-even of a free-competition market in the manufacturer's perspective.

¹²⁵ See Danny Ben-Shahar & Assaf Jacob, *A Preach for a Breach: Promoting Copyright Infringement as an Optimal Monopolistic Behavior* 16 (Interdisciplinary Ctr. Herzliya, Working Paper, 2000), available at <http://ssrn.com/abstract=240908>.

¹²⁶ *Id.* at 15; POSNER, *supra* note 6, at 80.

¹²⁷ See 35 U.S.C. §§ 101–03 (2006) (inferring that the innovator is bound to have positive R&D costs, and the consumer will accordingly have a descending demand graph due to the patentability requirements that these sections establish).

¹²⁸ Mark A. Lemley, *Antitrust, Intellectual Property and Standard Setting Organizations*, 90 CAL. L. REV. 1889, 1938 (2002).

¹²⁹ *Id.*

in Figure 4) will not express the optimal social value of the patent,¹³⁰ and thus the potential social welfare achieved under free-competition will not be realized.¹³¹

In conclusion, under micro-economic studies, monopolists impose a deadweight loss on the economic surplus, which in turn reduces outputs to a level below the market's demand.

B. Part II: The Economic Problem

1. Social Damage

As shown above, the monopoly privilege drawn from the current patent system imposes a burden on society. This monopoly is manifested by altering the competition variables' free market values, but the obvious damage is that consumers pay more and yet receive less quantity.¹³² This is even more evident in dealing with essential facilities,¹³³ where the impact can be substantially critical: the patentee sees a less elastic demand graph, so it will reduce outputs with correspondingly high prices, thus *amplifying* the deadweight loss.¹³⁴

A possible scenario occurs in an idiosyncratic market created by the innovative product itself. Here, this could happen with a new product without existing commercial use. For example, think of a new medical product for personal use, which until now was only used by medical staff. Thus, the patent system constitutes an efficient over-protection, which improperly balances the consumer's burden and the manufacturer's incentive.¹³⁵ Summing up this point, the inventor enjoys a statutory incentive far greater than it should have had in order to bring its product to market. This increases the deadweight loss and imposes a larger burden on the consumer's surplus than if the incentive would have been less significant, yet powerful enough to encourage R&D.

2. Market Power Disaster

This Part discusses the conventional economic explanation for the social damage mentioned above, which derived into the term 'market power.' Market power can

¹³⁰ LANDES & POSNER, *supra* note 87, at 300.

¹³¹ See Illoong Kwon, *Patent Portfolio Race and Secrecy* (forthcoming), available at <http://plaza4.snu.ac.kr/~ilkwon/Research/Secrecy.pdf> (noting that social welfare in this sense, is expressed by the economic surplus).

¹³² See POSNER, *supra* note 6, at 197–98 (indicating that a contrasting point of view suggests that patents are *not* a solemn monopoly agent, in the antitrust sense).

¹³³ Cyril Ritter, *Refusal to Deal and Essential Facilities: Does Intellectual Property Require Special Deference Compared to Tangible Property?*, 28 WORLD COMPETITION L. & ECON. REV. 281, 288 (2005).

¹³⁴ See POSNER, *supra* note 6, at 11–12.

¹³⁵ See Ritter, *supra* note 133, at 293–94.

damage social welfare by the deadweight loss it imposes.¹³⁶ By possessing patent rights, the patentee may be able to generate an excessive amount of market power, due to the nature of the product.¹³⁷

Generating innovations is a very important element of social welfare.¹³⁸ Therefore, patentees should enjoy a positive amount of market power.¹³⁹ However, the same power granted by the current IP regime leads to inevitable social damage, caused by deadweight loss.¹⁴⁰ Due to the existence of market power, consumers will eventually consume less of the product embodying an invention, than the optimum.¹⁴¹

One explanation for the conclusion above is that the current patent system favors proprietary criteria above the economic factor, inasmuch as the surplus loss is not affected by the amount of the market power possessed.¹⁴² Thus, damage to social welfare will manifest as a deadweight loss at its full potential.¹⁴³ This explanation assumes that the patentee has substantial market power and calculates its prices based on marginal costs alone.¹⁴⁴

3. *How the Absence of Intellectual Property Rights Affects Welfare*

a. *Optimum Demand vs. Optimum Supply*

Once patented goods have been released into the public domain, the supply and demand model equilibrium in the specific market will tend to seek the optimal social value area (as shown in Figure 2), thus the economic surplus will be maximized (as described by point (b) at Figure 4) in relation to public welfare and consumption.

Still, one cannot ignore the fact that by not granting the right incentive and privileging the inventor above others, entrepreneurs will *ex ante* expect a return not less than their production costs, and less than the optimal social value price (in

¹³⁶ Katz, *supra* note 55, at 885-86.

¹³⁷ See Ritter, *supra* note 133, at 292 (explaining that a patent holder may be so successful during the term of protection that his return far exceeds what would have been necessary to reward and encourage the innovation. This may be due to the fact that the product creates its own market, or wipes out competitors in an existing market either because it is genuinely superior to rival products or because it owes its dominance to peculiar market forces such as network effects or switching costs/learning effects).

¹³⁸ See *id.* at 290.

¹³⁹ See POSNER, *supra* note 6, at 195 (noting that in this context the discussion of *substantial market power*, can be referred to as “monopoly power”).

¹⁴⁰ Katz, *supra* note 55, at 904–06.

¹⁴¹ SHAVELL, *supra* note 69, at 222 (explaining that because firms with market power will set prices higher than unit costs, customers will purchase less than they would in a perfectly competitive market setting).

¹⁴² See *infra* Part IV.

¹⁴³ A. Mitchell Polinsky & William P. Rogerson, *Products Liability, Consumer Misperceptions, and Market Power*, 14 BELL J. ECON. 581–83 (1983).

¹⁴⁴ Katz, *supra* note 55, at 854.

Figure 2 it is shown as the amount of $[a - b]$ per unit), which will not encourage production to the optimum level.¹⁴⁵

b. Two-tier Monopoly

The monopoly offered by patent law leads to a reduction of the competition around the patent in two ways: (1) the first being a *de facto* monopoly innate to the patented invention itself; and (2) a second being a *de jure* monopoly derived from the exclusivity right granted to the patent.¹⁴⁶

Therefore, not only does the invention itself demand high resources to be reproduced by others,¹⁴⁷ but the manufacturer will proactively act to restrict any reproduction of its product.¹⁴⁸ Accordingly one can consider the *de facto* monopoly, as a *quasi-property right* inherent in the innovation itself which is likely to achieve the similar outcome of by law IPRs.¹⁴⁹ This inherent term can be either a greater or shorter time period than a legal grant of rights. In this context, most inventions enjoy some measure of a *de facto* monopoly even without granting IPR by law.

4. Setbacks to Implementation of Knowledge

The patentee is free to delay the embodiment of its patent for revenue considerations, such as market segmentation and distribution, advancing its product to a certain level during the lifetime of the patent.¹⁵⁰ As long as the patentee is not entering the patent misuse boundaries (for a review regarding the ‘patent misuse’ doctrine and its association with empowering the antitrust standard over patent law, see Part IV.B.5 below), the patentee will enjoy full protection without concern for the potential infringement by its opponents. In contrast to the above mentioned privilege, stands the very heart of competition ratifications, as laid down in this

¹⁴⁵ See *supra* Part III.D.

¹⁴⁶ Nicolas Bocard, *Natural Monopoly and Regulation* 3–4, 8 (May 2010) (unpublished manuscript) (on file with the University of Giorna, Department of Economics), available at <http://www3.udg.edu/fcee/professors/nbocard/micro2/part2/MonoReg.pdf>.

¹⁴⁷ Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534, 545–46, 548 (2003) (noting that non-infringing use does not mean free access, as the process of translating object code to source code can be quite expensive and time consuming).

¹⁴⁸ See, e.g. Ignazio Musu, *Intellectual Property Rights and Biotechnology: How to Improve the Present Patent System* 2, 11 (FEEM, Working Paper No. 83.05, 2006), available at <http://www.feem.it/userfiles/attach/Publication/NDL2005/NDL2005-083.pdf> (explaining that holder of an intellectual property right has a power of exclusion which limits access by others to the newly produced knowledge).

¹⁴⁹ Mark R. Patterson, *Inventions, Industry Standards, and Intellectual Property*, 17 BERKELEY TECH. L.J. 1043, 1073-74 (2002).

¹⁵⁰ See Michael Abramowicz, *The Danger of Underdeveloped Patent Prospects*, 92 CORNELL L. REV. 1065, 1075-76 (2007). See also *infra* Part IV.A.1, detailing competition variables nos. 1, 2 and 5 – *Output, Distribution and Advancement*, respectively.

article—to stimulate innovators to ameliorate society with their knowledge, efficiently to all market segments, as quickly as possible.¹⁵¹

Furthermore the patentee is free to hinder others by expanding the basic patent entitlement, while other manufacturers are trying to imitate the product's intention or solution algorithm by reverse engineering.¹⁵² Thus, access to public domain is again being limited.¹⁵³ Such behavior affects the market, while moving towards a global scope of intellectual property protection.¹⁵⁴

In certain fields, such as pharmaceutical and biotechnology studies, where patents are considered to be subjectively important to attract investors, researchers may be excluded from innovating around a patent, and therefore lack incentive to research a specific issue.¹⁵⁵ This immensely increases the 'set-back' of implementing researchers' knowledge, giving the patentee a way for legally broadening the scope of its patent.¹⁵⁶

Another 'set-back' can be in virtue of situations by which the possessor of the information is protected by two sets of intellectual property rules, such as patent law and copyright law (e.g. computer software). Accordingly, the information will be distantly kept away from the public domain. This type of dual regulation over the access to the information will effectively deter others from implementing and integrating their own knowledge with the protected information.¹⁵⁷ 'Setting-back' implementation of innovative information and restricting outputs, is not only disastrous to social welfare, but also contradicts the patent law ideals that are unified with antitrust law.¹⁵⁸

a. Overuse vs. Underuse of Property

Turning now to discuss a specific proposition, this article will explain how IPR results in 'setting-back' the implementation of a patent by not offering the innovator with motivation to use its knowledge in the optimal way.

¹⁵¹ See *id.* at 1075 (noting that by waiting an additional year before making a decision to initiate the development process, a patentee loses a year of potential profits but gains the possibility of greater certainty about the potential profitability of commercialization).

¹⁵² *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476 (1974).

¹⁵³ *Id.* (indicating that when the innovator is concerned with reverse engineering, he might avoid applying for patent in the first place); see SHAVELL, *supra* note 69, at 150 (using Coca-Cola as an example to explain why *not* patenting an invention intensifies, thus intensifying the limitation over public access to knowledge, even after the time period of the patented has been extended).

¹⁵⁴ Peter Drahos, *An Alternative Framework for the Global Regulation of Intellectual Property Rights* 6, 27–28 (CGKD, Working Paper No. 1, 2005), available at <http://cgkd.anu.edu.au/menus/publications.php>.

¹⁵⁵ Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCI. 698, 700 (1998).

¹⁵⁶ *Id.*

¹⁵⁷ Weiser, *supra* note 147, at 538–40.

¹⁵⁸ See *supra* Part III.E.

As a contraposition to Garrett Hardin's tragedy of the commons metaphor,¹⁵⁹ this article introduces an argument concerning property underuse and the diminution of the public domain—access to public domain should be strictly regulated in order to avoid overuse of property.¹⁶⁰ Hardin's metaphor illustrates that where the marginal cost of accessing the public domain exceeds the benefit of expanding it, and one's considerations will not benefit the whole.¹⁶¹ Conversely, access to public domain should be strictly regulated in order to avoid overuse of property—stands an argument concerning property underuse and the tragedy of the anti-commons occurs whenever an individual possesses rights to exclude others from using property significant to society (or intellectual property, for our concern).¹⁶² Michael Heller, in his article, favorably claims a property regime that allows multiple owners to use and to acquire ownership over the protected property, which might prove more efficient than in a state of a single owner.¹⁶³

This article presumes that intellectual property is a scarce resource, compelling society to motivate its possessors so they will have incentive to engage in R&D.¹⁶⁴ However, excessive rights, granted to the patentee prevents the patentee from acting optimally in using its knowledge, as much as it prevents others, which may be more efficient, from using the knowledge or cooperating with the patent owner.¹⁶⁵ This presumption creates an inevitable allocative inefficiency paradigm.¹⁶⁶ In return, this causes an underutilization of knowledge, impeding rather than promoting production and ameliorations.¹⁶⁷

Information underutilization is compounded by false patent applications, which delay implementation by others, presumably aggravated due to the low cost of patent filing.¹⁶⁸ As will be explained in Part IV.C.1.a, moving towards a liability rule, rather than a strict property rule, may help to avert any setback of knowledge implementation, thus reducing any underuse of the patented information.

b. Output Control

One of the negative effects of IPR on consumption is that as patentees are able to increase costs that exceed the market's optimum demand prices.¹⁶⁹ As shown above, patented products will be marketed above their production costs beyond the

¹⁵⁹ Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1244 (1968), available at <http://www.sciencemag.org/content/162/3859/1243.full.pdf?sid=b31527d9-44cf-40f3-9b17-2ddd4be7efc7>.

¹⁶⁰ Michael A. Heller, *The Tragedy of Anti-Commons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 626 (1998).

¹⁶¹ Hardin, *supra* note 159, at 1244.

¹⁶² Heller, *supra* note 160, at 626.

¹⁶³ *Id.* at 673-74.

¹⁶⁴ LANDES & POSNER, *supra* note 87, at 374.

¹⁶⁵ Heller, *supra* note 160, at 626, 677.

¹⁶⁶ Heller & Eisenberg, *supra* note 155, at 700.

¹⁶⁷ Musu, *supra* note 148, at 10.

¹⁶⁸ JACOB, *supra* note 96, at 40.

¹⁶⁹ SHAVELL, *supra* note 69, at 142

socially optimal pricing, thus consumers who do not value the product more than its optimal social value will not purchase it.¹⁷⁰ The social welfare damage is equal to the difference between production costs and the selling price, which is exclusively determined by the patentee.¹⁷¹ In other words, the portion of consumption loss is in the exclusive hands of the patentee.¹⁷²

5. Patent Misuse

Patentees commonly wish to expand their patent by the use of contract. In this manner, the patentee can enjoy revenues from complementary goods it is selling, or by royalties from the patent.¹⁷³ Such course of action, binding the purchase of both the patentable product and its complementary products, often through goods-to-be-sold contracts, allows the patentee to tie-in its patent rights with a product that did not receive any *de jure* rights. Therefore, certain mechanisms have been amended to patent law, such as the patent misuse doctrine,¹⁷⁴ that aim to deny the patentee from using *de jure* rights in a way that can harm social welfare and increase the deadweight loss. However, as will be explained, these legal tools may not be efficient enough in keeping the antitrust standard.

Tying-in is a direct derivative, and probably the most common market control practice, of patent misuse, which strengthens and effectively encourages the inefficiency of patent protection.¹⁷⁵ In the guiding precedent, *Morton Salt*,¹⁷⁶ an attempt was made to expand the monopoly limits granted to a patentee. The respondent, a manufacturer of a salt tablet depositing machines, made use of tying-in practice by obligating its buyers, to purchase its unpatented salt tablets.¹⁷⁷ Even so, the U.S. Supreme Court did not rule in favor of the petitioner, on the grounds of contradiction to public policy to resolve the dispute under discussion via the legal frame of antitrust law.¹⁷⁸ The Court dismissed the necessity for discussion of antitrust directives, and did not find a Clayton Act violation for exclusive dealing arrangements.¹⁷⁹ In other words, patent misuse does not have to render infringement of antitrust law.¹⁸⁰ However, patent misuse occurs whenever the manufacturer improperly tries to extend the patent scope or time period.¹⁸¹

The Court ruled that the use of a patent, for the purpose of restraining competition in the marketing of an unpatented product, will not be immunized by patent law, however a manufacturer producing complementary goods, for example,

¹⁷⁰ *Id.*

¹⁷¹ *See id.*

¹⁷² *See* Figure 2.

¹⁷³ *See* POSNER, *supra* note 6, at 198.

¹⁷⁴ 35 U.S.C. § 271(d) (2006).

¹⁷⁵ LANDES & POSNER, *supra* note 87, at 372–73.

¹⁷⁶ *Morton Salt Co. v. G. S. Suppiger Co.*, 314 U.S. 488, 492–93 (1942).

¹⁷⁷ *Id.* at 490.

¹⁷⁸ *Id.* at 494.

¹⁷⁹ *Id.*

¹⁸⁰ Feldman, *supra* note 1, at 409.

¹⁸¹ *Id.* at 413–12.

will not be disqualified from trading in the same market.¹⁸² Thus *Morton Salt* presents the reader with the inadequacy of antitrust law regarding using patents to prevent competition around the patent, inasmuch as the Clayton Act prohibits contractual agreements in restraining trade, and will not produce any cause of action.¹⁸³

Summarizing, one can see that the legal analysis courts use for patent misuse cases not only explicitly disregards the antitrust standard, but by not applying it over patent law and its social welfare protection mechanisms,¹⁸⁴ the Court ended up addressing patent law's directives on their own.¹⁸⁵

a. Compulsory Licensing

Compulsory licensing is another counter measure for patent misuses,¹⁸⁶ which is often viewed as reducing innovation incentive.¹⁸⁷ This practice is disputed amongst scholars, with respect to impacting incentives to innovate. Although compulsory licensing reduces the ROI,¹⁸⁸ it does not necessarily inflict a direct reduction of a manufacturer's incentive to produce, nor does it significantly impact incentives to research and produce.¹⁸⁹ Furthermore, some commentators may speak of compulsory licensing as promoting (or at least having a neutral effect) inventors' incentives to invest in R&D.¹⁹⁰

Reviewing U.K. law, the 1977 Patents Act ("P.A. 1977") encourages patentees to release commercial rights, in the form of licensing contracts.¹⁹¹ This is beneficial to the patentee because it does not cause the original patentee serious inferiority effect since in most situations, it sets the license terms.¹⁹² This statutory encouragement has the patentee voluntarily waive its monopoly rights, for both the social welfare

¹⁸² *Morton Salt*, 314 U.S. at 491. Chief Justice Stone interprets the monopoly given by patent law by noting that: "A patent operates to create and grant to the patentee an exclusive right to make, use and vend the particular device described and claimed in the patent. But a patent *affords no immunity for a monopoly not within the grant . . .*" *Id.* (emphasis added).

¹⁸³ *Id.* at 494.

¹⁸⁴ Robin C. Feldman, Should We Breathe Life into Patent Misuse? 9–10 (Jan. 8, 2003) (unpublished manuscript), available at http://www.law.berkeley.edu/files/belt_IPSC_2003_Feldman.pdf.

¹⁸⁵ *Id.* at 15.

¹⁸⁶ See THOMAS TERRELL, TERRELL ON THE LAW OF PATENTS § 9.06 (David Young et al., 14th ed. 1994) (noting that some forms of patent misuse include Either stipulating patent rights by requiring actual performance, or denying or limiting the patent after it has been granted).

¹⁸⁷ Ritter, *supra* note 133, at 298.

¹⁸⁸ *Id.* at 294.

¹⁸⁹ *Id.*

¹⁹⁰ See, e.g., Jonathan Baker, *Promoting Innovation Competition Through the Aspen/Kodak Rule*, 7 GEO. MASON L. REV. 495, 514 (1999). "[I]t is unlikely that the dominant firm's innovation incentive would *decline substantially* as a consequence of antitrust enforcement . . ." *Id.* (emphasis added).

¹⁹¹ Patents Act, 1977, c. 37, § 46(3)(d) (Eng.) [hereinafter P.A. 1977] (reducing patent renewal fees by half). U.K. Patent Law, addresses patent misuse in forms of "*abuse of monopoly*." *Id.*

¹⁹² TERRELL, *supra* note 186, § 9.57. However, in some situations, the license terms will be set objectively by the Comptroller. *Id.*

interest in promoting innovation, and for receiving compensation over time for resources already spent. In this context, U.K. law intertwines competition rationales with patent rights since section 51 of P.A. 1977,¹⁹³ and section 81 of the 1998 Competition Act,¹⁹⁴ jointly allow both the Comptroller, and the Competition Commission to examine the patent in order to seek the public interest.¹⁹⁵

In addition, the Comptroller has power, independent of the patentee, to release the patent for the use of other manufacturers, by linking them to the original patentee by contract. In this situation the intervention of the Comptroller will not cancel the patent by whole, but downgrade it by enabling others to be entitled to obtain commercial license under the patent.¹⁹⁶

6. Price Discrimination

a. Definition

In a monopoly, the patentee is able to discriminate in prices as a market control practice.¹⁹⁷ The patentee accomplishes this by specifying market segments and having accustomed pricing policy which will eventually exclude other segments from consuming innovative products due to a lack of resources.¹⁹⁸ Accordingly, those segments will endure a reduction of their consumer surplus.¹⁹⁹

As one of the antitrust standard's cornerstones, section 2(a) of the Clayton Act prohibits a single manufacturer to control the market by virtue of price discrimination.²⁰⁰ The Clayton Act constitutes prohibitions of *de facto* price differential which may consist of a *prima facie* injury to the competition, by scales of a reasonable probability.²⁰¹ The burden to rebut any such *prima facie* case, while a substantive price differential exists, is on the allegedly discriminating party, who must show that prices were lowered (or not raised) in order to "meet competition" in "good faith," according to section 2(b) of the Clayton Act.²⁰²

¹⁹³ P.A. 1977, c. 37, § 51.

¹⁹⁴ Competition Act, 1998, c. 41, § 18 (Eng.).

¹⁹⁵ TERRELL, *supra* note 186, § 9.57.

¹⁹⁶ P.A. 1977, c. 37, § 48. This move is referred as "licenses of right."

¹⁹⁷ See, e.g., Chang-Fa Lo, *Potential Conflict Between TRIPS and GATT Concerning Parallel Importation of Drugs and Possible Solution to Prevent Undesirable Market Segmentation*, 66 FOOD DRUG L.J. 73, 73 (2011) (explaining how price discrimination, in the context of parallel importation, can help control the market in specific market segmentations, using patented drugs as an example).

¹⁹⁸ *Id.*

¹⁹⁹ Richard A. Posner, *Vertical Restraints and Antitrust Policy*, 72 U. CHI. L. REV. 229, 235–36 (2005).

²⁰⁰ Pub. L. No. 63-212, 38 Stat. 730, § 2(a) (codified as amended at 15 U.S.C. § 13(a)).

²⁰¹ *Falls City Indus., Inc. v. Vanco Beverage, Inc.*, 460 U.S. 428, 431, 434-35 (1983).

²⁰² *Id.* at 431; 15 U.S.C. § 13(b).

b. The Patent Law Attitude

Patent law effectively ignores the antitrust standard's price discrimination taboo, by granting lawful monopoly rights.²⁰³ Via patent law, the patentee is able to set prices, regardless of competition considerations, thus crucially excluding certain market segments.²⁰⁴ To demonstrate price discrimination via patents, consider the following scenario:

Assume John holds a patent over a non-invasive glucose monitor, while Jayne sells standard invasive glucose monitoring kit for ten dollars, supplying 100% of the demand in her city. John sets the price for his non-invasive product at forty dollars, supplying twenty-five percent of the demand. Depending on the demand elasticity, this arrangement tends for the worse while speaking of luxury and substitute goods which possess consumer's necessity.²⁰⁵

Consequently, in this scenario, at least seventy-five percent of the market will not benefit from the amelioration, and continue monitoring its glucose level, via Jayne's classic meter. A legitimate competition injury resulted by harming welfare regarding the advancement of the competition variables.

c. The Antitrust Law Attitude

The revisions made by the Robinson-Patman Act of 1936,²⁰⁶ which amended the Clayton Act, declared the use of a price discrimination marketing methods unlawful, while an impairment of primary or secondary line competition was being manifested,²⁰⁷ as long as there was a relationship between different purchasers.²⁰⁸ The prohibition was judicially interpreted to associate with the seller and its competitors rather than the purchaser.²⁰⁹

The Supreme Court concluded that price discrimination, alone, does not rise to the level of a flat prohibition of price differentials, inasmuch as price differences constitute but one element of a section 2(a) violation.²¹⁰ However, price discrimination is illegal when it is conditioned on a relationship as mentioned above, which in effect lessens competition in any line of commerce.²¹¹

²⁰³ Katz, *supra* note 55, at 840–41.

²⁰⁴ See *supra* Part IV.B.4.b.

²⁰⁵ Katz, *supra* note 55, at 883–84.

²⁰⁶ Anti-Price Discrimination Act, Pub. L. No. 74-692, 49 Stat. 1526 (codified as amended at 15 U.S.C. § 13).

²⁰⁷ Federal Trade Comm'n v. Anheuser-Busch, Inc., 363 U.S. 536, 543-44 (1960). Even if the impairment applies individually to one of the competition line, or one of them combined with the tertiary line, distribution geographically or demographically meaning.

²⁰⁸ *Id.* at 545.

²⁰⁹ *Id.* at 546.

²¹⁰ *Id.* at 550, 553.

²¹¹ *Id.* at 550.

d. For-Profit and Not-for-Profit Firms

This Part examines the implications of price discrimination in the not-for-profit sector. There is a clear difference between for-profit and not-for-profit firms, in terms of permissions and restrictions. The former is banned from engaging in cartelization, while the latter, in special circumstances and condition precedents which enables efficiency by cartelization formation, is normally not banned.²¹²

Not-for-profit organizations may choose to cartel for reasons other than maximizing outputs, without violating their mission for being a not-for-profit organization.²¹³ However, this may result by *worsening* the negative influences of their monopoly, and thereby diminishing the (overall) output of the market, which may ultimately damage welfare, unlike for-profit organizations which do not control market prices.

In sum, not-for-profit monopolies may eventually engage in price discrimination due to enhanced gains expected under such a competitive market.²¹⁴

e. Implications on Patent Rights

Next, this article analogizes its findings from the previous section, to explore what inefficient outcomes the ability to discriminate in prices might have over social welfare.²¹⁵ Below are a few scenarios that explain the possible outcomes as follows:

1. A single manufacturer will be free to engage in price discrimination commerce aimed to enhance profits on the expense of the economic surplus, especially of low income market segments.²¹⁶
2. In order to increase revenues, we can expect the innovator to draw many resources in order to gain monopoly (e.g., in the preliminary stage, to attain patent), resources which will delay manufacturing and increase retail prices, so the manufacturer must turn to market segments which can bear those costs.

²¹² POSNER, *supra* note 6, at 84. Furthermore, on the aspects that the mixture of for-profit and not-for-profit firms in the same market (e.g. cultural centers, and medical organizations) (in the U.S. for this matter) has an impact on the market's economy and efficiency, by venturing in specific cartels. *Id.* Even so, there is no antitrust law exemption for not-for-profit organizations that are trying to diminish competition in favor of raising revenues alone. See *Nat'l Collegiate Athletic Ass'n. v. Bd. of Regents of Univ. of Okla.*, 468 U.S. 85, 100 (1984).

²¹³ See Tomas J. Philipson & Richard A. Posner, *Antitrust and the Not-For-Profit Sector* § 2, (Nat'l Bureau of Econ. Research Working Paper No. 8126, 2001) *available at* <http://www.nber.org/papers/w12132.pdf> (indicating that the commercial intention for forming non-profit organizations, presumably, aside from enjoining taxation exemptions, will be to *maximize outputs* rather than maximizing cash flows).

²¹⁴ POSNER, *supra* note 18, at 85 (explaining that even if the overall output may be lesser opposed to a uniformed price commerce).

²¹⁵ See Philipson, *supra* note 213, § 5.

²¹⁶ POSNER, *supra* note 6, at 9.

3. Non-designated market segments will be denied from consuming the product, and the overall output of the new product will be reduced already in the distribution stage.²¹⁷

4. Production costs that exceed the competitive equilibrium will limit consumption in a way that the retail price consumers pay will not reflect the product's utility, thereby not creating disposable income for buying the product.²¹⁸

As a result, patented goods bear price and quantity below the equilibrium level, which in effect increases the deadweight loss absorbed by society.²¹⁹ With respect to not-for-profit inventions, inventions (such as academic advances), the same problem of collusion arises, thus reducing outputs and denying access to knowledge.²²⁰

By allowing patentees to participate in price discrimination, the optimal equilibrium in the supply and demand model, and the economic surplus confined by it, is not achieved.²²¹ Yet, it is very likely that the patent system does not bestow the optimal protection which incentivizes production and perhaps opposes the competitive market.²²²

C. Part III: Exclusivity Damage

1. Infringement Accusation—On What Grounds?

a. Introducing: Liability Rules

Primarily, this Part will avoid demonstrating the differences between property rule and liability rule regimes,²²³ instead, this section will explain why it is more efficient, in the manner of social welfare, to grant patent rights that come from property rules, although these rules are less effective in protecting the possessor of the knowledge.²²⁴

²¹⁷ See Lo, *supra* note 197, at 73, 75.

²¹⁸ See SHAVELL, *supra* note 69, at 138.

²¹⁹ F. Scott Kieff & Troy A. Paredes, *The Basic Matter: At the Periphery of Intellectual Property*, 73 GEO. WASH. L. REV. 174, 180 (2004).

²²⁰ See Philipson, *supra* note 213, § 2.5.

²²¹ LANDES & POSNER, *supra* note 87, at 378.

²²² In a competitive market, the sum of all market segments, according to the manufacturers allotting by price differentials, will be higher than the sum of all potential customers, unified.

²²³ For further understanding of the meaning “property rule” and “liability rule” see Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1089 (1972); Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713, 713 (1996).

²²⁴ See LANDES & POSNER, *supra* note 87, at 12 (noting that the main reason for granting any property rights over an asset is to reduce transaction costs so that parties can engage in commerce over that asset, and form contracts about it).

For supporting this concept, this article looks over possible scenarios involving two parties arguing for the rights over a certain intellectual property, with one of them enjoying exclusivity, and an entitlement to injunctive relief against the other.

b. Property Rules vs. Liability Rules

When will society want to limit rights of a prior innovator and allow a subsequent innovator, by law, rights to engage in the market of the prior innovator? This would allow virtual infringement of any patent given to the prior innovator. In effort to understand intellectual property conflicts in a commerce context, four situations are presented as follows:

1. When parties do not bargain²²⁵

(a) If the deadweight loss, by denying competition around the information through subsequent innovators, and the prior inventor's expected ROI are known, and the state is willing to pay full compensation to the prior innovator for breach of its rights, under a property rule society will achieve the optimal social outcome.²²⁶

(b) Yet, because the abovementioned losses are not known and cannot be calculated in advance, information possessed by the state is not perfect. It is reasonable that the state knows both the costs of preventing any infringement (such as enforcement costs, and litigation costs), and the distribution of harm between the prior innovator and the infringer.²²⁷

Accordingly, with respect to a single innovator who does not participate and does not engage in commercial relations with its competitors, it will be more efficient to deal with the infringer by a rule of liability.²²⁸ Thus, social welfare will result closer to the optimal point under a liability rule rather than under property rule.²²⁹

2. When parties do bargain²³⁰

²²⁵ One innovator holds knowledge, and avoids from participating others (i.e., manufacturers/researchers, etc.). Hence, the prior inventor seeks to file a patent in order to be granted exclusivity, both for eliminating the possibility of competition, more efficiency, entrepreneurs, and before another innovator files a patent over the same subject, denying the previous from engaging in the patent subject.

²²⁶ Kaplow & Shavell, *supra* note 223, at 724–25.

²²⁷ *Id.* at 776, (referring to factors respectively 'c' and 'h').

²²⁸ *Id.* at 760–61.

²²⁹ *Id.* at 725.

²³⁰ While for some reasons, such as geographic proximity, after the innovator has filed a patent, (and completed registration under the disclosure requirement) and his opponent, an entrepreneur in the same or similar/close field of expertise, develops commercial relations with him

In this scenario, the subsequent innovator will not be occupied with the patent by breaching the prior innovator's rights, yet will study the patent with its professional knowledge from a close profession.

(a) As a particular implementation of the Coase Theorem,²³¹ *regardless of the intellectual property regime* present, and under the assumption of perfect information between the parties, whether the bargaining succeeds, the outcome will always be Pareto effective.²³²

Unfortunately, between parties lies both cognitive and attribution biases, suggesting that people consistently and systematically overestimate their assets, meaning that bargaining between a patent holder and a complementary patent holder and a rival, is likely to fail.²³³

(b) However, in the case that the parties have not reached bargain with mutual benefit, the result will subjectively be superior to a result under a property rule as liability rule tends to be superior while encountering imperfect bargaining.²³⁴

Therefore, a property rule-based patent law will not produce the most efficient outcome in the sense of welfare where parties do not strike mutually beneficial bargaining between themselves.

D. Summary

In general, one sees that by applying liability rules over patent law, social welfare will, at least, *tend to optimize* through both increasing the potential for justified cooperation, and by allowing efficient infringement to occur.²³⁵ Liability rules do not subject infringement to taboo even while classifying them as a breach, thus encouraging efficient subsequent innovators to act. Moreover, under liability rule, parties are motivated to engage in commercial relations, and bargain, in case of a potential breach of the prior innovator's rights. It can now be understood that even among those opposing the "efficient breach" establishment,²³⁶ under property rules, patent infringement will result in an inferior outcome to liability rules.

in connection with his patentable rights (e.g. as for licensing, or transferring full rights, etc.), rather than breach his rights under the patent and be called an infringer.

²³¹ See Ronald H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1, 6, 8 (1960).

²³² Kaplow & Shavell, *supra* note 223, at 733.

²³³ Heller & Eisenberg, *supra* note 155, at 701.

²³⁴ See Kaplow & Shavell, *supra* note 223, at 735–36 (1996).

²³⁵ *Id.* at 785 (insisting that liability rules are superior to property rules, both in the obvious situation where parties do not bargain, and in the not so obvious situation, where parties do bargain, but under liability rule the expectancy of social welfare increases).

²³⁶ For further explanation on "efficient breach," which can describe the *exact* logic behind the previous analysis, see Polinsky A. Mitchell, *Risk Sharing Through Breach of Contract Remedies*, 12 J. L. STUD. 427, 427–29 (1983).

It is now understood, even among those opposing the “efficient breach” concept that under property rules, patent infringement will result in an inferior outcome to liability rules.²³⁷ The fact remains that commercial use survives transaction costs, and imperfect information.²³⁸ Ultimately, that may jeopardize the probability that inventors will grant competitors access to patented knowledge, either by license or by any other set of contract arrangement, even when it may be justified.²³⁹

1. Anecdote for Developments in Biotechnology

In order to demonstrate this article’s point of view, it shall briefly review patent implications upon biotechnological developments. In the context of therapeutic innovations, such as drugs, it is evident that society not only benefits from modernism, but it is also in need for such amelioration to be up-to-date with evolution.²⁴⁰ However, enabling an inventor in the pharmaceutical field to attain high amounts of market power constitutes a medical risk to society, resulting in: reduction in consumption of innovation,²⁴¹ and lowering incentives to research and develop.²⁴² All the more so, when high transaction costs are inherent to biomedical and biotechnology research.²⁴³ Nevertheless, it is likely to presume bargaining between researchers, for example when each holds a specific patent that can be linked into a new discovery, will fail.²⁴⁴

The problem has occurred in genetic engineering when researchers found themselves restrained from practicing with a decoded gene or sequence.²⁴⁵ Biomedical R&D in the U.S., federally supported, experienced a fluctuation towards the private sector in 1980, which encouraged patents in that field and lessened public access to the resultant research.²⁴⁶ Paradoxically, this shift discourages research and innovation in the biotechnological field.²⁴⁷ Thus, it may be interpreted that the progression of quality in biotechnological studies is being denied.²⁴⁸

²³⁷ See generally *id.* (describing “efficient breach”).

²³⁸ Heller & Eisenberg, *supra* note 155, at 700.

²³⁹ See Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534, 548–49 (2003).

²⁴⁰ See Heller & Eisenberg, *supra* note 155, at 698–99.

²⁴¹ This analysis is similar to our previously discussion, granting exclusivity to the inventor, imposes a deadweight loss while outputs diminish and prices rise beyond the optimum equilibrium. *Id.*

²⁴² See Heller & Eisenberg, *supra* note 155, at 700.

²⁴³ *Id.* at 701; Michal B. Abramowicz, *Perfecting Patent Prizes*, 56 VAND. L. REV. 115, 189 (2003).

²⁴⁴ See Heller & Eisenberg, *supra* note 155, at 700.

²⁴⁵ *Id.* at 699.

²⁴⁶ *Id.*

²⁴⁷ *Id.*

²⁴⁸ See Musu, *supra* note 148, at 11.

V. COMPETITION RATIONALITIES—INTERSECTION WITH PATENT LAW

A. Constitutional Aspects

From the eyes of the manufacturer, other than the patentee, the antitrust standard is a constitutional and fundamental human right—the freedom of occupation choice.²⁴⁹ By now, scholars and courts are aware that there is no dichotomy between the high standard granted to basic human rights, and the safekeeping of the free competition principle.²⁵⁰ While the latter is derived from the former, competition is indeed protected in the extent of constitutional law—while lawfully manifested by the antitrust standard. Hence, damaging or restricting the right of free competition by law, in the context of a manufacturer requesting to extend his activity to a certain field, have the relevant set of by constitutional mandates related to human rights. In this context reasons for granting constitutional protection of free-competition, from the consumers' point of view, embody the public interest for welfare via regulations, maintaining high quality standards, reasonable prices and extensive distributional array.²⁵¹ In this context, the reasons for granting constitutional protection of free-competition, from the consumers' point of view, embodies the public interest for welfare via regulations, keeping high quality standards, reasonable prices, extensive distributional array, etc.²⁵²

B. Economic Aspects

As previously discussed in Part IV, by allowing exclusivity rights, a patentee diminishes outputs and raises prices, damaging potential social growth. Patent law should be used only within the scope of a resource, aimed to achieve economic growth and expand public domain.²⁵³ Moreover, patent law and the economic implications of commercial law in general, should be read together, having IPR defined under commercial rationales.²⁵⁴

²⁴⁹ Eyal Gross, *How Free Competition Became a Constitutional Right?—In Minds of the Right for Free Occupation*, 23 TEL-AVIV L. REV. 229, 235 (2005) (relating to the *competitive element*, as evolved through Israel Supreme Court rulings, and has expanded the prior perception, in the context of the freedom of occupation choice, which was constituted only by the *individuality element*).

²⁵⁰ *Id.* at 237.

²⁵¹ *Id.* at 255.

²⁵² *Id.*

²⁵³ Weiser, *supra* note 239, at 550 (acknowledging the importance of a law regime which on the one hand provides sufficient incentives for innovators, and from the other hand does not prevent open access over knowledge).

²⁵⁴ Dratler, *supra* note 73, at 439 (noting that “intellectual property law is a part of economic law, and the foundation of all economic law in the United States is the bedrock policy of free competition”).

However, it is my opinion that the current link between patent law and antitrust law, is not obvious nor understood whereas they each embody a particular logic, by contrasting means,²⁵⁵ as observed that the antitrust standard does not apply to patents and patent rights.

C. Restrictions on Patent Law on Behalf of the Antitrust Standard

Patent advocates suggest that in order to incentivize innovations and avoid the “problem of appropriability,” patent law must override the antitrust standard, and supply a dynamic prerogative.²⁵⁶ That concept is significantly beneficial to the single manufacturer, diminishing competition around it, by ensuring high standards of property rights.

The main concern remains, however, that patent law and the courts will eventually promote the means, which are used to motivate inventors through bestowing patent rights, rather than their objective, which is to enhance welfare by presenting innovations for consumption, expanding the public domain.²⁵⁷ It is clear enough that there are and should be “tradeoffs” between the advancement of competition, and motivation of inventors via protection.²⁵⁸ Though, finding the exact balance is much more complicated than can be shown by graphical display, and such a balance must be unambiguous.²⁵⁹

Due to the vast effect that proprietary rights have on the economy, appropriability in intellectual property can neither be achieved by patent law nor antitrust law, by themselves. Thus, by determining the right amount of incentive, it is important to take into consideration competition rationalities previously described in Part V. This includes, the extent of damage that the patents can have on constitutional rights of both the consumers and competing manufacturers.

D. How is the Antitrust Standard Applicable?

This Part begins by noting the current incentives granted to those who are able to improve society and avoid having to answer to antitrust law. This article amplifies the disadvantage that such categorical immunization has on welfare.²⁶⁰ It can be seen, however, that the antitrust standard is applicable to patent law rights in the

²⁵⁵ Peritz, *supra* note 2, at 6.

²⁵⁶ Richard M. Brunell, *Appropriability in Antitrust: How Much is Enough?*, 69 ANTITRUST L.J. 1, 2 (2001).

²⁵⁷ Peritz, *supra* note 2, at 6.

²⁵⁸ Ritter, *supra* note 133, at 293. Such tradeoffs are implemented by: (1) the full disclosure requirement, and the public domain entry reference; and (2) by the defined period of time that patent law provides the exclusivity to the patentee. *Id.* Even so, the time period is determined ex ante and not on a case-by-case basis as antitrust law doctrines examines, will never be accurate and can over-protect the patentee on the account of society. *Id.*

²⁵⁹ Brunell, *supra* note 256, at 4.

²⁶⁰ Ritter, *supra* note 133, at 293.

context of the patent misuse doctrine and in compulsive licensing.²⁶¹ Furthermore, patent law deters the refusal to license via “vertical arrangements” between manufacturers practicing close fields in a joint venture.²⁶² Yet, while discussing patent rights, antitrust law hardly supplies the answer for a problematic monopolistic behavior of the patentee as a single manufacturer.²⁶³ Moreover, attempts of the Supreme Court to bind anticompetitive prohibitions with patent law provisions have not been heeded.²⁶⁴

In order to accomplish enforcement of competitive doctrines, by virtue of the antitrust standard, the patent system has to intrinsically implement certain provisions and restrictive prohibitions. Thus, patent law will affect any unwelcome gain of extra market power *ex-ante*, rather rely on judicial interpretation for applying doctrines alien to the patent system.²⁶⁵ Due to the economic harm patent provisions may inflict on social welfare,²⁶⁶ and the unwillingness of the courts to see patent law as part of the general economical law,²⁶⁷ will society achieve the proper outcome.

E. Supporting Welfare by Disclosure

The disclosure requirement, joined with the enablement element,²⁶⁸ aims to enhance welfare by enabling other manufacturers to replicate the patent, once it enters public domain. This preserves an adequate patent-competition balance.²⁶⁹ Due the reduction in proprietary information via public disclosure, innovators will be more efficient in innovating around the patent. Moreover, disclosure helps moderate the competitor’s marginal cost curve, whereas the information disclosed virtually economizes expenditures, which have already been spent by the first innovator.²⁷⁰

Maximizing knowledge permeation into society and industry, alongside expanding the public access to knowledge, is more than a legitimate social goal, which might also justify cutting into patent rights.²⁷¹ By that perception, the means have to be suitable in a way that both stimulates the revelation of knowledge and reduces its scope of proprietization.²⁷²

²⁶¹ See *supra* Part IV.B.

²⁶² See Weiser, *supra* note 239, at 561.

²⁶³ Feldman, *supra* note 1, at 410.

²⁶⁴ *Id.* at 418-20.

²⁶⁵ U.S. DEP’T OF JUSTICE, EFFICIENCY IN ANALYSIS OF ANTITRUST, STANDARD SETTING, AND INTELLECTUAL PROPERTY, 8 (Jan. 18, 2007) (noting that not all competition rationalizations can be imported from Antitrust law. Nevertheless, Antitrust law will act, regarding to patent holders behavior or outcomes, ex-post as opposed to its common and desirable way of action).

²⁶⁶ See *supra* Part IV.B.

²⁶⁷ Feldman, *supra* note 1, at 425–26, 430.

²⁶⁸ 35 U.S.C. § 112 (2006).

²⁶⁹ See Dratler, *supra* note 73, at 550–52.

²⁷⁰ LANDES & POSNER, *supra* note 87, at 299.

²⁷¹ Ritter, *supra* note 133, at 9.

²⁷² See SHAVELL, *supra* note 69, at 148–49 (discussing “second innovations” as a justified cause, in particular regarding the quality and advancement competition variables).

Furthermore, full and good faith disclosure requirements prevent others from inefficiently spending time and money researching a protected area²⁷³ or developing near the patent.²⁷⁴ However, innovators having answered all patent prerequisites, might in some circumstance might choose to refrain filling for patent thus not releasing their knowledge.²⁷⁵ Therefore, regimes should chart a legislative course of action that will enhance disclosure,²⁷⁶ rather than motivate innovators to waive patent system protections and conceal their knowledge.²⁷⁷

VI. TOWARDS A NEW PATENT MODEL—*LEX FERENDA*

A. Introduction

The intellectual property law regime has to bear in mind two elementary criteria, both of equal importance.²⁷⁸ First, it has to preserve high standards for encouraging the possessor of the knowledge to partake in R&D.²⁷⁹ Second, it must not unduly limit competition, enabling society to advance, even without the innovator doing its best effort to embody its knowledge.²⁸⁰ Therefore, patent law, as implemented correctly, should eventually result only in increasing social welfare and not just motivation for entrepreneurs.²⁸¹

Regarding the tension mentioned above, Professor Philip J. Weiser suggests that patent system should condone replication via reverse engineering, yet allow engaging in R&D aside the patent, by that shifting the potential competition from the patent itself towards complementary goods, thus improving both the competitive manufacturer and the genuine patentee.²⁸² The current patent system acknowledges the importance of privileging inventors to embody their knowledge, only in the amount where incentives are needed, recouping investments and gaining profits,

²⁷³ William T. Fryer, III, *Design Patent System for the Twenty-First Century*, 24 AIPLA Q. J. 331, 355, 375 (1996).

²⁷⁴ Feldman, *supra* note 1, at 410.

²⁷⁵ SHAVELL, *supra* note 69, at 149.

²⁷⁶ Fryer, *supra* note 273, at 353. This concept is especially true regarding small businesses and private inventors, which by the current patent system are being pushed to the corner while having to publish their findings before issuing the patent, thus not satisfying their secrecy concerns. In this context, we are speaking of the un-canceled interim between publicly filing for patent, and the final registration. *Id.* at 350–51, 365.

²⁷⁷ SHAVELL, *supra* note 69, at 149.

²⁷⁸ See Graeme B. Dinwoodie, *Federalized Functionalism: The Future of Design Protection in the European Union*, 24 AIPLA Q.J. 611, 617 (1996).

²⁷⁹ Weiser, *supra* note 239, at 549–50.

²⁸⁰ *Id.*

²⁸¹ LANDES & POSNER, *supra* note 87, at 310. Whereas the most important question to be asked under the eyes of the Economic Analysis of Law, is whether the Patent Law regime in present is cost effectiveness in terms of welfare.

²⁸² Weiser, *supra* note 239, at 566.

without driving inventors far from marginal costs.²⁸³ Yet, as economic research shows, patentees increase their marginal costs, attaining monopoly advantages.²⁸⁴

B. Alternative Means of Protecting Patentable Objects

Henceforth, this section will shortly review faults arising from globalization of IP influencing developing states, which should be taken into consideration while rethinking the IPR regime. Professor Peter Drahos claims that developing groups must enjoy non-intervention over their design of rights, free to design their own property regime, so they will be motivated to set IPRs in a way that will maximize social welfare.²⁸⁵ Therefore, intellectual property law cannot move to lower standards than those existing on a global scale, nonetheless it is expected to ascend;²⁸⁶ and (2) welfare growth potential is most likely to be narrowed to the average global degree.²⁸⁷ Thus, the state will not be able to enjoy economic benefits arising from lower standards of IPR protection.²⁸⁸ Where the relevant economy is closer to a developing state situation, the limitation will be more effective and have stronger (i.e., negative) applications over the economic growth potential.²⁸⁹

Professor Drahos suggests recognizing patent rights as a basic human right, addressing patent law as part of the constitutional law.²⁹⁰ Addressing patents in a constitutional manner allows restricting patent rights and comparing them to other constitutional values.²⁹¹ Accordingly, there has to be a brilliant constitutional competition model, or else one returns to the starting point, while both values, detached, do not produce an efficient outcome.

Another proposal, by Professor Michal Abramowicz, is to reward innovators with patent prizes rather than excessive rights.²⁹² Rewarding innovators with prizes

²⁸³ MASOUDI, *supra* note 265, at 3.

²⁸⁴ LANDES & POSNER, *supra* note 87, at 311.

²⁸⁵ Drahos, *supra* note 154, at 2. In his paper, Professor Drahos, bases the assumption that non-intervention promotes a potential for economic growth.

²⁸⁶ *Id.* at 2, 6–7.

²⁸⁷ See generally Musu, *supra* note 148 (regarding the developing states' lack of entrepreneurial capabilities and inadequate financial means).

²⁸⁸ See *id.*; see also *supra* Part IV.A (explaining that benefits drawn from lower standards of protecting IPR, are manifested by all competition around the producing of any innovative product, in sense of the equilibrium achieved under free competition variables).

²⁸⁹ Musu, *supra* note 148, at 13.

²⁹⁰ See Drahos, *supra* note 154, at 15.

²⁹¹ Brunell, *supra* note 256, at 3–4. In the context of this article, this refers to values that derive mostly from the freedom of occupational choice. Amongst them (and mainly) is the constitutional principle of competition. This article hereby reinforces Drahos's proposition, and suggests that patent law should not deny operatively addressing competition rationalities, however invoke all relevant features from the antitrust standard, and enforce them on the patent system.

²⁹² Abramowicz, *supra* note 243, at 128. Professor Abramowicz bases his assumption on grounds of a non-proportionate system, which endows a constant privilege by each patent, without matching the benefit society would be rewarded with, alternately the deficiency which society may endure by denying the inventor a patent motivate—the specific time period patent law awards. *Id.*

increases welfare by reducing the deadweight loss.²⁹³ In Abramowicz's outlook, implementing the prize system in full, and not setting aside the current patent system, should in the long run, null the deadweight loss.²⁹⁴ State granted rewards for creative action, while softening the proprietary regime or even replacing all intellectual property by a full state buyout of the invention, may lead to consumption increases along with competitive pricing (competition variables of outputs and pricing).²⁹⁵

The prize, given to the inventor, which can either be fixed, or calculated on an estimation in negotiation between the patent applicant and the state, requires an assessment of both the patentable innovation and the amount of the deadweight loss which society will bear.²⁹⁶

Due to added costs of negotiation, states tend to fix the prize value and avoid negotiating with every innovator individually.²⁹⁷ Because innovator is biased and will likely value its innovation higher than, the suggested prize, the whole system is endangered.²⁹⁸ A solution may be found by revising the fixed price annually and by diversifying innovations into varied prize divisions.²⁹⁹

The prize value can fluctuate between and the assessment of the patentable innovation and the amount of the deadweight loss, however the inventor will push towards a prize value closer to the deadweight loss.³⁰⁰ Nevertheless, the fact that there is asymmetric information will presumably not have an extreme negative effect upon negotiation, though the state is less risk averse than the individual inventor.³⁰¹ Therefore, society achieves an approximate Pareto optimum result, while the inventor secures his return.³⁰² Likewise, the state benefits from a competitive-like equilibrium in the supply and demand model and increasing the consumer surplus.³⁰³ In addition, by implementing the prize system, society presumably stimulates private

²⁹³ *Id.* at 129. This article supports the notion that that the exclusivity patent law grants, does not consider the patent subject ad hoc, nor its contribution or necessity for society. Notwithstanding, customizing a patent regime that distinguishes each patent subject, and calculates its optimal monopoly time period, cannot be efficient at all, nor is it cost effective. It will, however, produce heavy administrative costs. Thus, it can be deduced that present patent law is intrinsically in nature incommensurable regarding the social benefit achieved from motivating inventors and entrepreneurial acts.

²⁹⁴ See generally *id.* at 180–209 (indicating that a prize system would reduce deadweight loss).

²⁹⁵ SHAVELL, *supra* note 69, at 138.

²⁹⁶ Abramowicz, *supra* note 243, at 131–32.

²⁹⁷ *Id.*

²⁹⁸ Kaplow & Shavell, *supra* note 223, at 735–37. Although by moving towards a liability rule and prizing the inventor rather granting a monopoly for a patent term, we allegedly soften the grounds for negotiation, and succeed finding the golden path for motivating innovativeness, without having the bargain between state and the inventor at risk. *Id.*

²⁹⁹ Abramowicz, *supra* note 243, at 131–33.

³⁰⁰ *Id.*

³⁰¹ *Id.* at 131 (indicating that the *Shavell and van-Ypersele model* can be used as a good milestone for a new patent system).

³⁰² *Id.* (noting that by receiving the 'prize' in advance, the innovator is secured by a state contract. Thus, benefiting from investment channels' interest in less risky innovative R&D investments).

³⁰³ *Id.*

and small innovators that find trouble in funding R&D, by offering them a greater and in shorter time to ROI.³⁰⁴

C. The Suggested Model

1. Standard Setting System

A good starting point to eliminate manipulations in licensing is to apply standard settings in contractual agreements regarding patents. Such standard settings are subject to criticism and limits. Thus, it is an executive authority's duty to shape standard settings so it will correctly balance between incentives to initially engage in R&D, and keep the competition variables at an optimum.³⁰⁵ The executive authority, alongside the legislator, should establish more professional standard setting organizations ("SSOs") and strengthen them,³⁰⁶ by adjusting specific standard settings for patents by field.³⁰⁷

Due to the nature of antitrust law, one cannot expect it to substitute for SSOs and achieve all of the advantages of the SSOs in governing by legal rights.³⁰⁸ Scholars support the premise by which SSOs governing patents will deter abuse of patent rights, at least theoretically, in the sense of monopolization and the restriction of trade.³⁰⁹ Furthermore, establishing SSOs that specialize in contracts and licensing patents will help achieve the implementation of competition rationales, which cannot stem from importing antitrust law provisions to patent law cases.³¹⁰ Furthermore, establishing SSOs which specialize in licensing patents and contracts regarding patents will help achieve, *ex-ante*, the implementation of competition rationales, which cannot stem from importing antitrust law provisions to patent law cases.³¹¹

2. Diversification Between Patent Classifications

Not all inventors enjoy the same incentives, nor do they treat them in a similar manner. As previously discussed, inventors may act regardless of the present IP regime at present, such as in the internet world where a proprietary entitlement is

³⁰⁴ Abramowicz, *supra* note 243, at 223.

³⁰⁵ MASOUDI, *supra* note 265, at 5 (speaking of optimizing the economic surplus both from the manufacturers' and the consumers' point of view).

³⁰⁶ Lemley, *supra* note 128, at 1901–03.

³⁰⁷ Weiser, *supra* note 239, at 583 (regarding, amongst other things, governmental funds in order to establish standard setting organizations).

³⁰⁸ Lemley, *supra* note, 128, at 1930–34 (discussing the interplay between SSOs and existing antitrust law).

³⁰⁹ *Id.* at 1923–25.

³¹⁰ MASOUDI, *supra* note 265, at 13.

³¹¹ *See supra* Part IV.

descriptively not utilitarian.³¹² Notwithstanding, a strict proprietary regime might reduce motivation to invent, due to costs of protection in the eyes of the inventor.³¹³

To sum up, in the absence of exclusionary privileges for inventors in certain fields, it is rational and suitable that SSOs will take the place in designing the efficient patent rule, under an assumption that SSOs hold specific field expertise like the World Wide Web Consortium for Internet Software.³¹⁴ In this context, a tendency towards an open access regime will provide sufficient incentive to produce, and increase consumption, so the aggregate social welfare will rise. This will set grounds for diversification in protecting classified inventions, improving the system by addressing the patent subject *ad hoc*, without imposing a serious economic burden.

3. Promoting Competition in the Patent System

Scholars, in modern times, often criticize patent law's social economic objectives, by practicing the dominant view that patent rights should at first grant exclusivity. For example, Professor Rudolph Peritz mentions the necessity of reducing propertization scope in patent law, which can be noted in the same breath with the Kaplow and Shavell's tendency towards a preferable liability rule directly importing doctrines from the antitrust standard into the patent system.³¹⁵ A basic argument against the current system is that without a modern, specifically adjusted, legislative step for enhancing competition around patents, other than by the 'general' antitrust law protection will always be below optimum.³¹⁶

Another argument, which stems from criticizing the constant twenty year patent term, is that patent law fails to promote the expansion of public access to knowledge, in means of effectively exposing other innovators and manufacturers to newly embodied information, as they play catch up at the end to the patent term.³¹⁷ In that context, society can be more supportive in reducing, or at least adapting, the patent term to the patentable subject in hand, or at least by class.³¹⁸

For example, by pre-adjusting the duration of the patent, to increase nominatively with R&D costs, will not harm the incentive element, and conversely will materialize the incentive derived from the inventor's ROI paradigm.³¹⁹ Additionally, society will benefit from effective values of competition variables, particularly pricing, and expansion of the public domain.³²⁰ By applying a standard

³¹² Weiser, *supra* note 239, at 569–71.

³¹³ *Id.* at 570.

³¹⁴ Lemley, *supra* note, 128, at 1943, 1948–52.

³¹⁵ Peritz, *supra* note 2, at 1.

³¹⁶ *Id.* at 5.

³¹⁷ *Id.* at 7–8.

³¹⁸ Feldman, *supra* note 1, at 445.

³¹⁹ See *supra* Part II.B.

³²⁰ SHAVELL, *supra* note 69, at 145–46.

setting system and establishing SSOs, society relatively avoids increasing social costs, which would arise by adapting a patent system on a case-by-case basis.³²¹

It is a fundamental premise that patent law, even though containing some patent abuse mechanisms, is neither able nor intended to care about any of the competition rationales, mentioned in this article.³²² Nevertheless, the patent system should incorporate a formula by which the balance between incentives and maintaining the antitrust standard doctrines permeates competition and assimilates pro-competitive principles intrinsically.³²³ Such an action will be, of course, uncommon to the negative sense in which antitrust law examines *ex post* a violation of competitive values. This action will have a preliminary evaluation of the necessary motivations—adopting an intrinsic *ex ante* antitrust examination.

It is also relevant to consider pre-adjusting the antitrust standard, assimilated in a new patent model, and not modifying patent law to the current antitrust law, in order to achieve an efficient balance between the required incentive and competition variables.³²⁴

VII. CONCLUSION

After all mentioned above, this article concludes that the current patent system imposes an economic barrier on society, thus preventing society from advancing in the very course which was intended for patent law. As originally legislated, it tended to lead to improving social welfare.³²⁵ Therefore, any model which bears in mind a reduction of the deadweight loss by increasing the amount of competition variables, will have a desirable outcome, even if just to open the gateway for changing the patent status quo.³²⁶

Policymakers should recognize the contribution that manufacturers, other than the ‘first to apply’, may have for researching and developing a product embodying innovative knowledge. Thus policymakers should adapt a property regime which is able to effectively stimulate cooperation between manufacturers, researchers, and innovators while reallocating exclusivity rights by efficiency analysis.³²⁷ They must apply an anti-commons property regime where necessary, in order to avoid underuse of the patent.³²⁸ Nevertheless, any new model, which takes pro-competition in mind, should be adapted *ad hoc* to the relevant field in which it occupies, though there are

³²¹ Lemley, *supra* note 128, at 1957–58 (indicating the adaptation of the existing patent regimes to SSOs).

³²² See Peritz, *supra* note 2, at 6.

³²³ Dinwoodie *supra* note 278, at 667–68 (explaining that a harmonized system, which balance between both inventor’s stimulations and maintaining competition, is not beyond reason).

³²⁴ See Kieff & Paredes, *supra* note 219, at 184, 204 (noting that antitrust law does not, nor can it, prohibit neither market power nor holding a lawful monopoly).

³²⁵ See *supra* Part III.

³²⁶ Abramowicz, *supra* note 243, at 180–81 (departing from the status quo IP regime via a prize system).

³²⁷ Heller, *supra* note 160, at 641.

³²⁸ *Id.* at 669.

miscellaneous circumstances, by which exclusionary rights are desirable in order to advance competition and social welfare.³²⁹

Efficiently implementing the guidelines for a patent rights system, as suggested in this article, one must bear in mind the economic and commercial purpose of patent law, as cited above by Feldman, which cannot be anything other than: “[t]he *overall benefit to society*, rather than the benefit to an individual inventor, that is paramount in the patent system.”³³⁰ However, due to inherent contradictions between antitrust law and patent law as fortified by the Supreme Court in *Morton Salt*,³³¹ it will be more efficient not to adjust antitrust doctrines, but rather forming a new patent system which will endeavor to achieve competition rationalizations.³³²

Harnessing all of the above, formatting a new patent system, should in general represent:

- Diminishing the propertization criteria, when the innovation may enjoy more than a single IPR, and in order to prevent extending the time period before the innovation enters public domain.
- Referring to the patentable character specifically, for example, differing pharmaceutical patents from organizational structure models, by forming specific and professional standard setting organizations.
- Standardizing and moving to standard setting organizations, rather than enabling patentees to act on behalf of their own personal interests.
- Reducing and regulating the amount of market power attained by patentees so it will not be possible to attain extra market power that can lead to imposing a deadweight loss (beyond what is necessary for motivating innovativeness).
- Amplifying disclosure and the will to disclose information (such as by reducing the term between filing and registering), correspondingly reducing the protection over the knowledge itself and expanding the free access to the knowledge.
- Limiting the possibility for tying-in a patent, by allowing innovators to implement knowledge more freely around the patent, without entering the boundaries of patent infringement, yet use the innovative information.

³²⁹ Lemley, *supra* note 128, at 1938–39.

³³⁰ Feldman, *supra* note 1, at 400.

³³¹ See *supra* Part IV.

³³² Peritz, *supra* note 2, at 14–15. Though antitrust seeks remedies *ex post*, which in a patent case such remedy can be crucially late for society to succeed achieving the optimal outcome – in that case we are in need for an *ex ante* mechanism which will both incentive inventors, and prevent them from attaining too much market power and imposing a deadweight loss.

Thus, the outcome will diminish the deadweight loss, and tend to balance the benefit from innovation, on one hand, and the harm to social welfare due to the impingement on competition, on the other hand.³³³

³³³ It is to be noted, in conclusion of this article, that the legislative means, which may be taken into account while forming a new patent system, have not been presented, nor does this article or its author try to limit policymakers only to statutory amendments.