REASONABLE PATENT LICENSING IN THE SUPPLY CHAIN – A CRITICAL REVIEW OF PATENT EXHAUSTION

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I. INTRODUCTION

A patentee enjoys the right to exclude others from making, using, offering for sale, selling or importing a patented article. This right can be shared or transferred through an assignment. The patentee can also exempt persons from the exclusionary power of the patent through a patent license. Among various patent enforcement manners, licensing is one of several strategies for exploiting and commercializing the patents. Patent licensing allows the owner to increase the rewards from the invention in a manner consistent with prior reasonable expectations. Economic theory views licensing as beneficial because the practice permits the patent owner to transfer the right to the most productive users, and use the market to help determine the most efficient means of commercializing the invention.

Hi-tech companies are accordingly conducting various licensing activities to increase their rewards. Microsoft Corporation (“Microsoft”) is an example. It has enforced a licensing program with respect to Android patents since 2011. The licensees are the producers of various Android devices, including mobile phones, notebooks and other electronic devices. In the notebook ("NB")

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1 See 35 U.S.C. § 271(a) (2006) ("Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States, or imports into the United States any patented invention during the term of the patent therefore, infringes the patent").
3 See SCHWARTZ & GOLDMAN, supra note 2, at 12. See also 35 U.S.C. § 261 (2006) ("The applicant, patentee, or his assigns or legal representatives may in like manner grant and convey an exclusive right under his application for patent, or patents, to the whole or any specified part of the United States").
4 ROBERT C. MEGANTZ, HOW TO LICENSE TECHNOLOGY 1 (1996).
6 Id.
7 Android is a Linux-based operating system designed primarily for touch screen mobile devices such as smartphones and tablet computers, developed by Google in conjunction with the Open Handset Alliance. See Jon Brodkin, Microsoft Collects License Fees on 50% of Android Devices, Tells Google to “Wake Up”, ARS TECHNICA (Oct. 23, 2011, 5:30 PM), http://arstechnica.com/information-technology/2011/10/microsoft-collects-license-fees-on-50-of-android-devices-tells-google-to-wake-up.
8 Those Android device producers are HTC and Samsung. Id.
supply chain, the licensees include both NB original design manufacturers (“ODMs”) and the brand.\(^9\) Microsoft greatly benefits from such Android licensing activity. It is estimated that Microsoft earned US $800 million from Android royalties in the second quarter of 2012.\(^10\)

The patentee may collect more royalties if more licensees are granted licenses. The patentee expects to grant licenses to more licensees to increase his rewards. A common practice is that the patentee licenses the patents to all participants in a supply chain to ensure that the end products of this supply chain will be fully covered by the licenses. For example, if a patentee holds the patents involving a technology of a component part, the patentee may grant a patent license directly to the component manufacturer, to the ODM who purchases and incorporates the components into the end products, and to the distributor who sells the end products under its own brand. Those participants in the supply chain may respectively take licenses from the patentee so that their manufacturing and selling activities would be immune from patent infringement.\(^11\)

The patents are commonly licensed by means of license agreements.\(^12\) “Licenses are contractual arrangements between a


\(^10\) Previous estimates said that Microsoft would make US $444 million from Android royalties per year, but they were later updated to show the royalty income at a much higher amount. J. Angelo Racoma, *Microsoft Earned $800 Million from Android Royalties in Q2 2012*, ANDROID AUTHORITY (Aug. 7, 2012 7:00AM), http://www.androidauthority.com/microsoft-earned-800-million-from-android-royalties-in-q2-2012-106017/.

\(^11\) The patent infringement concerns behavior. An individual need only perform one of these acts to be liable as an infringer. ROGER E. SCHECHTER & JOHN R. THOMAS, *PRINCIPLES OF PATENT LAW* 275 (2d ed. 2004).

\(^12\) The patents would also be licensed by compulsory license under applicable laws as identified in Art. 31 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement). It permits that “the law of a Member allows for other use of the subject matter of a patent without the authorization of the right holder, including use by the government or third parties authorized by the government.” TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 333 [hereinafter TRIPS continued . . .]
patentee and one who is granted a right to make, use, or sell under the patent.”13 License agreements may be conducted between the patentee and the intended licensees.14 The terms and conditions of the license agreements are drafted on the basis of the licensor and licensee’s mutual consent.15 Despite the fact that license agreements are made based on freedom of contract, certain legal issues arise when the patentee signs a license agreement with each of the participants in a supply chain. The main issue relates to the patent exhaustion doctrine. This doctrine, also known as the first sale doctrine, “operates to ‘exhaust,’ or extinguish, the exclusive rights of sale and use as to patented articles sold with the patent owner’s authorization.”16 Accordingly, subject to the license agreement between the patentee and the component manufacturer, components should be deemed “licensed” patented articles. Patent rights exhaust after the licensed components are sold to the customers. Downstream purchasers like the ODM and the brand are actually buying licensed components. Given that downstream purchasers purchase the patented articles from other licensees and also take the same patent license from the licensor,17 several questions subsequently arise: (i) How to appraise the licenses directly granted to downstream purchasers under the patent exhaustion doctrine?; (ii) Whether patent exhaustion would be applied to the downstream purchaser’s license agreements?; and (iii) How to enforce respective license agreements under the exhaustion doctrine?

From Bloomer18 to Quanta19, the Supreme Court has established

14 Arthur Alan Leff, Contract as Thing, in FOUNDATIONS OF CONTRACT LAW 329, 329 (Richard Craswell & Alan Schwartz eds., 1994) (“[T]he...contract was developed as a method of segregating, for a particular and predictable treatment, contemplated trading transaction between free-willed persons in an assumedly free enterprise, free market economic system.”).
15 The contract is the product of a joint creative effort. See id. at 330.
17 See infra Part III (explaining that the reason that the downstream purchasers would directly take the licenses from the patentee involves various business models).
18 Bloomer v. McQuewan, 55 U.S. 539, 549 (1852).
that the patent exhaustion doctrine operates as an affirmative defense in a patent infringement action. The doctrine introduces the concept that the legitimate sale of a patented product extinguishes the patent holder’s exclusive rights over the article sold, and the purchaser takes the title without further restraint or obligation under the patent laws.

Although this doctrine acts as a defense to the infringement claim and a restriction to the patentee’s right over the patented article after sale, its status as a contract rule to be applied in the licensing relationship remains unclear. There is no case confirming the status of the patent exhaustion doctrine as a contract rule. Justice Thomas in Quanta did not address whether the patent exhaustion doctrine operates as an immutable rule or a default rule that may be contracted around. Consequently, we observe the need to re-define the role of the patent exhaustion doctrine to resolve the issues above. We will also provide a balanced approach in later sections to consummate several signed license agreements under patent exhaustion.

This article has five sections. The first section provides an introduction to this article. The second section briefly overviews the patent exhaustion doctrine and defines its legal status. The third section introduces the licensing arrangements and business models in current practice, and further reviews and targets the key legal issues that arise in current practice. The fourth section suggests several practical approaches to resolve the licensing issues under patent exhaustion. The final section is a summarized conclusion to the article.

II. THE OVERVIEW OF THE PATENT EXHAUSTION DOCTRINE

A. The Origin and Concept of Patent Exhaustion

The patent exhaustion doctrine, also known as the first sale doctrine, evolved in the United States during the late nineteenth century to accommodate the free movement of patented goods in commerce. The patent exhaustion doctrine dates back to the Supreme Court’s 1852 decision in Bloomer v. McQuewan. Later, in Adams v. Burke, the Supreme Court first announced the exhaustion of

21 Id.
22 Rinehart, supra note 16, at 486.
23 Id. at 484.
24 Dufresne, supra note 20, at 12.
monopoly doctrine,\textsuperscript{25} that “when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article, in the language of the Court, passes without the limit of the monopoly.”\textsuperscript{26} In these cases, the Supreme Court basically recognized that the authorized transfer or sale of the patented article triggers patent exhaustion.

In \textit{United States v. Univis Lens Co.},\textsuperscript{27} the Supreme Court gave another substantial requirement, known as the essential feature test, to apply the patent exhaustion doctrine to the patented article sold. This was a case where the Supreme Court extended the patent exhaustion doctrine to the sale of a partially completed patented article, so long as the article exhibits the essential features of the claimed invention.\textsuperscript{28} The Court stated the following:

\begin{quote}
The full extent of the monopoly is the patentee's exclusive right to make use, and vend the invention or discovery. The patentee may surrender his monopoly in whole by the sale of his patent or in part by the sale of an article embodying the invention. His monopoly remains so long as he retains the ownership of the patented article. But sale of it exhausts the monopoly in that article and the patentee may not thereafter, by virtue of his patent, control the use or disposition of the article.\textsuperscript{29} . . . \textit{[W]here one has sold an uncompleted article which, because it embodies essential features of his patented invention, is within the protection of his patent, and has destined the article to be finished by the purchaser in conformity to the patent, he has sold his invention so far as it is or may be embodied in that particular article.}\textsuperscript{30}
\end{quote}

Thus, the essential feature test is \textit{per se} a condition to apply the patent exhaustion doctrine to the patented articles sold. One academic has further commented that \textit{Univis} is the controlling authority on patent exhaustion.\textsuperscript{31}

\footnotesize
\begin{itemize}
\item \textsuperscript{25} \textit{ALAN S. GUTERMAN, INNOVATION AND COMPETITION POLICY} 217 (1997).
\item \textsuperscript{26} \textit{Adams v. Burke}, 84 U.S. 453, 456 (1873).
\item \textsuperscript{27} \textit{United States v. Univis Lens Co.}, 316 U.S. 241 (1942).
\item \textsuperscript{29} \textit{Univis Lens Co.}, 316 U.S. at 250.
\item \textsuperscript{30} \textit{Id.} at 250-51.
\item \textsuperscript{31} \textit{Osborne, supra} note 28, at 650.
\end{itemize}
In several cases, the Supreme Court highlighted the “royalty or consideration” to be paid for exchanging the patentee’s monopoly to the patented articles.\(^{32}\) It seems that the royalty or consideration to be paid is a “must” to trigger the patent exhaustion, echoing the patentee’s desire to increase the rewards arising from the patent invention. However, the U.S. Constitution only grants the exclusive right to the inventors by securing protection for a limited time, instead of directly ensuring the patentee’s compensation, for the purpose of promoting the progress of the science.\(^{33}\) One commentator has noted that the proper goal of intellectual property law is to give as little protection as possible consistent with encouraging innovation.\(^{34}\) As a result, the Supreme Court created the fair reward concept in *United States v. Masonite Corp.*, highlighting the balance of interests at stake in the patent system.\(^{35}\) The Court stressed that the form of the transaction does not govern, and addressed “[w]hether or not there has been such a disposition of the article that it may fairly be said that the patentee has received his reward for use of the article.”\(^{36}\) The Court did not elaborate on how and to what extent the reward would be considered fair.

On the other hand, however, the Court made it clear that the patentee’s reward is secondary and merely a means to an end.\(^{37}\) It echoed the same constitutional purpose of the patent system as addressed in *Motion Picture*, that “the primary purpose of our patent laws is not the creation of private fortunes for the owners of patents, but is ‘to promote the progress of science and the useful arts.’”\(^{38}\) From

\(^{32}\) Adams v. Burke, 84 U.S. 453, 456 (1873) ("That is to say, the patentee or his assignee having in the act of sale received all the royalty or consideration which he claims for the use of his invention in that particular machine or instrument, it is open to the use of the purchaser without further restriction on account of the monopoly of the patentees."); Keeler v. Standard Folding-Bed Co., 157 U.S. 659, 666-67 (1895) ("[N]o article can be unfettered from the claim of his monopoly without paying its tribute."); Univis Lens Co., 316 U.S. at 251 ("[T]he purpose of the patent law is fulfilled with respect to any particular article when the patentee has received his reward for the use of his invention by the sale of the article.").

\(^{33}\) U.S. CONST. art. I, §8, cl. 8.


\(^{35}\) Dufresne, *supra* note 20, at 14.


\(^{37}\) *Id.* ("[T]he promotion of the progress of science and the useful arts is the ‘main object’; reward of inventors is secondary and merely a means to that end.").

\(^{38}\) See *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 511 (1917) (referring to Pennock v. Dialogue, 27 U.S. 1, 19 (1829) ("[W]hile one great object was, by holding out a reasonable reward to inventors, and giving them an exclusive right to their inventions for a limited period, to stimulate the efforts of genius; the main object was ‘to promote the progress of science and useful arts.’").
the Court’s opinion, it is clear that if the reward has not been fairly received by the patentee, the patent monopoly would not be exhausted. But it remains unclear whether the patent exhaustion should always be conditioned upon certain compensation, or whether any consideration to be paid is a “must” to trigger the patent exhaustion. The judgment may be made on a case-by-case basis.\textsuperscript{39} The scholar hereby indicates another viewing angle suggesting that the “double royalty” is the \textit{sine qua non} of patent exhaustion through extending and interpreting the Court’s opinions in \textit{Univis}.\textsuperscript{40} This approach has never appeared in the court cases but may be practical as a supplementary rule when judging patent exhaustion.

Other than the “first sale doctrine,” the “essential feature test,” and “fair reward concept,” the Supreme Court has not identified any other substantial requirements to apply the patent exhaustion doctrine. One academic criticizes that after \textit{Bloomer} the patent exhaustion doctrine became fixed in U.S. patent jurisprudence as a kind of axiomatic truth, but the “theoretical underpinnings remain somewhat hazy.”\textsuperscript{41} Another author further comments that the “application of this seemingly straightforward doctrine has not been simple, straightforward or consistent.”\textsuperscript{42}

B. The Status of the Patent Exhaustion Doctrine

The legal status of the patent exhaustion doctrine is traditionally defined by both substantive and procedural perspectives. The patent exhaustion doctrine procedurally acts as an affirmative defense to infringement claims concerning the use or sale of a patented article after the patentee authorizes its sale.\textsuperscript{43} Its application substantively exhausts the patent holder’s rights to exclude others\textsuperscript{44} and terminates all patent rights to the patented article after initial authorized sale.\textsuperscript{45}

\textsuperscript{39} It may be easier to consider that the patentee has received fair reward when the patentee directly sells the patented articles, or concludes a royalty-bearing licensing agreement with the licensee. However, when the licensing agreement is royalty-free, how to judge the fair reward might be an issue.

\textsuperscript{40} \textit{Osborne}, \textit{supra} note 28, at 668 (“[P]recluding a double recovery for practice of a patent claim will thus obviate the applicability of the patent exhaustion doctrine.”).

\textsuperscript{41} \textit{Dufresne}, \textit{supra} note 20, at 13.

\textsuperscript{42} \textit{Osborne}, \textit{supra} note 28, at 646.

\textsuperscript{43} \textit{Rinehart}, \textit{supra} note 16, at 491. Rinehart further comments that the Supreme Court entwined the patent exhaustion doctrine with other defenses, i.e., patent misuse and restrictions in restraint of trade, which made the doctrine more difficult to ascertain the boundary between patent law and antitrust law. \textit{Id.} at 485.

\textsuperscript{44} \textit{Id.} at 491.

Other than purely being an affirmative defense in the procedure of the infringement claim and acting as the substantive rule on patent rights, one scholar directly gives the patent exhaustion doctrine the status of a “pliability rule.” The pliability rules are amalgamated rules in numerous combinations of property rules and liability rules. The property rules involve a collective decision as to who is to be given an initial entitlement, while the liability rules involve an additional stage of state intervention to protect the entitlement and permit the value of the transfer or destruction of such entitlement. This approach basically stands on the premise that the nature of the patent is the patentee’s “property right” to exclude others from making, using, offering to sell, selling or importing any patented invention. Its entitlement is protected by a property rule and the destruction of such entitlement is protected by the liability rule.

With such a dynamic attitude towards the legal remedies, the pliability rules focus on the point that the decision-maker in a patent infringement dispute must consider both property rights (offering injunctive relief) and liability rules (offering damages) when assigning a remedy. When the authorized sale of the patented articles triggers patent exhaustion, the patentee has waived the rights to exclude others under property rules and obtains no damage compensation under liability rules. The patent exhaustion doctrine that simultaneously applies the property rules and liability rules to the entitlements is accordingly considered as a pliability rule.

longstanding doctrine of patent exhaustion provides that the initial authorized sale of a patented item terminates all patent rights to that item.”).

46 Rinehart, supra note 16, at 511.
49 See F. Scott Kieff, Property Rights and Property Rules for Commercializing Inventions, 85 Minn. L. Rev. 697, 703 (2001) (stating that treating patents as property rights facilitates investment and that property rights and property rules are “essential” to achieve the “core goals” of the patent system).
50 Calabresi & Melamed, supra note 48, at 1092. Calabresi and Melamed actually consider three types of entitlements, “entitlements protected by property rules, entitlements protected by liability rules, and inalienable entitlements . . . to the extent that its transfer is not permitted between a willing buyer and a willing seller.” Id.
51 See Rinehart, supra note 16, at 488 (“Pliability rules allow decision makers to avoid the all-or-nothing decision of creating property rule or liability rule protection. Instead, decision makers may build flexibility into the rule . . . .”). See also Bell & Parchomovsky, supra note 47, at 7.
C. The Patent Exhaustion Doctrine as a Contract Rule

The Supreme Court has long permitted the patent exhaustion doctrine to be applied in contractual relationships. The Court reiterated in Quanta that the doctrine of patent exhaustion limits the patent rights that survive the initial authorized sale of a patented item.\(^{53}\) The patent exhaustion doctrine thus applied to Intel’s manufacture and sale of microprocessors and chipsets using LGE patents according to the agreement (“License Agreement”).\(^{54}\) Such exhaustion even applied to a separate agreement (“Master Agreement”) requiring Intel to give its customers written notice that the license does not extend to a product made by combining an Intel product with a non-Intel product\(^{55}\) so that LGE was prevented from further asserting its patent rights against downstream purchasers like Quanta.\(^{56}\) From this viewpoint, the Supreme Court has imposed the patent exhaustion doctrine as a strong mandatory rule that defines how patent contracting can be done as a matter of court-created policy for federal patent law.\(^{57}\)

On the other hand, the Supreme Court has offered the contracting parties certain flexibility to avoid the application of the patent exhaustion doctrine. The Court has permitted by contractual arrangement that a sale and license should be subject to certain restrictions so that the violation of those restrictions would not trigger patent exhaustion. In General Talking Pictures, the Court held that the patentee may grant licenses upon conditions not inconsistent with the scope of the monopoly by limiting the license in a defined field.\(^{58}\) Since the sale of the products was outside the scope of the license, the licensed seller and its customers were held liable for infringing the patents by violating such field-of-use restriction.\(^{59}\) The Federal Circuit, in Mallinckrodt, Inc. v. Medipart, Inc., also upheld a license agreement with a “single use only” restriction as enforceable under applicable laws of sales and licenses, and found that violation of the restriction could be remedied by an action for patent infringement.\(^{60}\)

\(^{54}\) Id. at 2110. (“[L]GE licensed the patents to Intel Corporation (Intel), in an agreement (License Agreement) that authorizes Intel to manufacture and sell microprocessors and chipsets using the LGE Patents (Intel Products).”).
\(^{55}\) Id. at 2111.
\(^{56}\) Id. at 2114.
\(^{59}\) Id. at 181–82.
Afterwards, the court in *B. Braun Med., Inc. v. Abbott Labs.* explicitly stated that the patent exhaustion doctrine does not apply to an expressly conditional sale or license.\(^{61}\) In these cases, the patent exhaustion doctrine is regarded as a default rule that the patentee can contract around to retain specified rights over the products beyond the first sale.\(^{62}\)

Given the court rulings aforementioned, defining the accurate status of the patent exhaustion doctrine from the contract rule perspective is questionable. The argument arises from a point that the patent exhaustion doctrine should be defined as either an immutable rule or a default rule.\(^{63}\) The patent exhaustion doctrine seems to be the immutable rule that must be applied without hesitation when it is triggered after the authorized sale.\(^{64}\) However, it seems reasonable to assume that it is the default rule, which the patentee may contract around.\(^{65}\) Dufresne directly indicates that the Federal Circuit framed the patent exhaustion doctrine as a mere default rule.\(^{66}\) On the other hand, the Amicus Curiae comments in *Quanta* regarding this issue are quite controversial. Some comments are in favor of the default rule position, while some argue against it.\(^{67}\) It is the default rule when the contracting parties negotiate the licensing terms and the sales conditions under the theory of freedom of contract.\(^{68}\) It is also the immutable rule after the authorized sale triggers its application. There is no room at this point in time to disclaim the application of the patent

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\(^{62}\) Dufresne, *supra* note 20, at 22.

\(^{63}\) Rinehart explains that the immutable rule would prohibit patent owners from restricting licenses or sales in ways that prevent exhaustion from occurring, while the default rule would allow patent owners to restrict licenses or sales in ways that prevent exhaustion from occurring. As a consequence, when the patent exhaustion doctrine is defined as the immutable rule, the patentee would not have remedies in patent law against violating such restrictions. In contrast, if the patent exhaustion is classified as the default rule, the patentee may seek remedies in patent law for violations of such restrictions. See Rinehart, *supra* note 16, at 486 n.13.

\(^{64}\) Kieff, *supra* note 57, at 321 (explaining that by treating the patent right as having been used up, the term “exhaustion” suggests an immutable state of affairs leaving no opt-out possible).

\(^{65}\) *Id.* at 326 (explaining that the type of contractual restrictions that implement a limited patent license are not foreign to property or contract law generally, are commonly used throughout consumer society, and are even more common in transactions among large commercial parties).

\(^{66}\) Dufresne, *supra* note 20, at 22.

\(^{67}\) Rinehart, *supra* note 16, at 486.

\(^{68}\) Kieff, *supra* note 57, at 325 (“It also is fashionable to see cases like *Quanta* as highlighting the tension between somewhat conflicting legal principles: one generally in favor of freedom of contract, and one generally in favor of freedom from unknown servitudes running with chattels.”).
exhaustion doctrine upon its *de facto* occurrence. As for the period upon the contract effectiveness prior to the authorized sale, the patent exhaustion doctrine would be more appropriately defined as the default rule than the immutable rule, because it can be contracted around before its occurrence. Notwithstanding, the patent exhaustion doctrine may also lose its status of being the contract rule in the event that the contracting parties mutually consent to certain sales or license restrictions that permanently preclude the triggering of the doctrine. Since there is no authorized sale by such restrictions, the patent exhaustion doctrine would never be applied or triggered.

*Figure 1* shows the status of the patent exhaustion doctrine in the given time. During the negotiation period, the patent exhaustion doctrine is the default rule, but the contracting parties may contract around it. After the authorized sale, the patent exhaustion doctrine is the immutable rule since such authorized sale triggers its occurrence. During the period of the contract’s effectiveness and prior to the authorized sale, the patent exhaustion doctrine is either the default rule or beyond the contract rule subject to the agreed sales or license restrictions. Such sales or license restrictions preclude the authorized sales so that the patent exhaustion doctrine would no longer be applied. It consequently loses the status of being the contract rule. Without such sales or license restrictions, the patent exhaustion doctrine remains the default rule in the contractual relationship.

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69 Osborne, *supra* note 28, at 662 (“Sales can be restricted but exhaustion cannot be disclaimed.”).
III. THE REVIEW OF LICENSING ARRANGEMENTS UNDER PATENT EXHAUSTION

A. The Licensing Arrangements and the Business Models

The patent licensing arrangement and the business model deeply affect each other in a supply chain. This article elaborates on this relationship through the lense of a component business in which a certain patent license is required.\(^{70}\) The component supplier supplies the component to the downstream customers, including the ODM and the brand, for incorporation into the final products. The ODM manufactures the final products for the brand. The component supplier needs the license for its manufacturing and selling activities.\(^{71}\) Once the sale of the component constitutes an “authorized sale,” the components are considered as the licensed products. The component supplier sells the patented articles to its downstream customers. Under the patent exhaustion doctrine, those customers have no need to acquire subject patent license by themselves.

However, the business arrangement is not always so simple. When the component supplier takes the license and pays the royalty to the licensor, the royalty becomes the component supplier’s manufacturing cost and is subsequently quoted to the downstream purchaser, i.e., the ODM.\(^{72}\) The ODM may not feel comfortable about the royalty costs transferred through the component price, but it has difficulty in challenging the number because it has no way to detect the royalties that the component supplier actually pays to the licensor.\(^{73}\) The ODM then considers taking the license directly from the patentee so that it

\(^{70}\) It is assumed that the components would employ the essential feature of the patents according to Univis Lens Co.

\(^{71}\) The license herein is quite general and commonly does not contain any sale and license restrictions. For example, the licensing terms might be given as “the licensor hereby agrees to grant the licensee a worldwide, personal, nonexclusive, nontransferable and nonsublicensable license under the covered patents to make, have made (solely for distribution by licensee), use, sell, offer for sale, import, export, rent, lease, transfer and otherwise deliver or distribute covered products during the term of the license agreement.”


\(^{73}\) The terms and conditions of the license agreement between the licensor and licensee are commonly kept in secret by the confidentiality provisions, which prohibit the contracting parties’ disclosure of the contract details. Breach of such confidentiality obligation may lead to material breach of the agreement.
may bargain for a better royalty and control the costs.\textsuperscript{74} The same situation would be repeated when the ODM shifts to the brand the royalty with the product price. The brand may contemplate the feasibility of taking the license under its own name.\textsuperscript{75} Accordingly, the inference under the patent exhaustion doctrine that not all of the participants have to take the license is legally true, but from the business perspective, it is risky for the individual participant to not have its own licenses because the participant may supply products to other customers that do not have such licenses. As a consequence, the participants in a supply chain may simultaneously be licensed for the same patents because of various and respective business considerations.

When the participants in a supply chain are all licensed for the same patents, the business models for such components could be arranged in several ways. Those models are subject to the parties’ determinations about whose license to apply to make the components “licensed.” The time that the authorized sale takes to exhaust patent rights would vary in different business models as well. The first model is to make the components licensed under the license obtained by the component supplier. The authorized sale occurs when the components are sold by the component supplier.\textsuperscript{76} In the second model, the components are covered by the ODM’s license.\textsuperscript{77} The authorized sale happens when the components (that have been incorporated into final products) are sold to the brand. The last business model covers the components by the brand’s license.\textsuperscript{78} The

\textsuperscript{74} The ODM may have better bargaining power than the component supplier to negotiate the licensing terms with the licensor because of the product volumes. If the components would be supplied by several component suppliers, the licensor may intend to form one licensing agreement with the ODM to cover all of the components from various sources instead of forming individual licensing agreements with various component suppliers, some of which may be missed during the course of enforcing such licensing program.

\textsuperscript{75} The brand may also have better bargaining power than the ODM to negotiate the licensing terms with the licensor based on the same aforementioned logic.

\textsuperscript{76} The components are licensed because the component supplier is granted the right to make and sell components.

\textsuperscript{77} Since the ODM is not the one who actually manufactures the components, the ODM has to outsource the components from the component supplier. Such components are licensed under the ODM’s right of “have made.”

\textsuperscript{78} The brand has the same situation with the ODM because the brand is not the actual manufacturer of the components. However, it is not workable that the brand directly outsources the ODM for components because (i) the ODM is not the one who actually manufactures the components, and (ii) the brand has no sublicensing right to further grant the ODM right to “have made.” The ODM indeed has the right to “have made” based on its own license with the licensor, but not on the basis of the right conveyed from the brand. Given this situation, the appropriate business
authorized sale occurs when the final products that incorporate subject components are sold by the brand.\footnote{The brand needs to outsource the ODM to incorporate the components with other materials for forming the final products. When the components are delivered from the component supplier to the brand, the brand has to ship them to the ODM for manufacturing. There are two kinds of arrangements here. The first one is the so-called “consignment” arrangement. The brand ships the components to the ODM without additional charge as the consigned materials. The other one is the “buy and sale” arrangement, in which the brand sells the components to the ODM. Under “buy and sale” arrangements, the royalty that the brand has to pay may be shifted to the ODM with the component price as the ODM’s manufacturing costs. For a convenience purchase, this Article refers to “consignments” to express the situation where the ODM’s components come from the brand, which includes both arrangements aforementioned.}

Figure 2 shows three basic business models and the corresponding licensing arrangements. The participants in a supply chain, including the component supplier, the ODM and the brand, respectively obtain the patent license as L1, L2 and L3 from the licensor. Business model #1 is arranged under L1. The sale of the components by the component supplier constitutes an authorized sale that triggers patent exhaustion. Business model #2 is based on L2. The ODM in this model needs to outsource to the component supplier for such components because the ODM is not the actual manufacturer of the components. The sale of the components (that have been incorporated into final products for the brand) by the ODM constitutes an authorized sale, which triggers patent exhaustion. Business model #3 is the most complicated and is executed on the basis of L3. Like the ODM, the brand needs to outsource the components to the component supplier and then consign such components to the ODM for incorporation into final products. The sale of the components (that have been incorporated into final products for the brand) by the brand constitutes an authorized sale, which triggers patent exhaustion.
B. The Review of Licensing Issues under Patent Exhaustion

Those business models look to be operating well independently, without conflicts under respective licenses obtained by each participant in a supply chain. The license agreements are also respectively applied to corresponding business models as deemed fit. However, we observe that several fundamental issues come from the fact that those license agreements are valid simultaneously, regardless of which business model the participants are adopting in any individual transaction. For example, when the participants intend to apply L1 and operate business model #1, L2 and L3 are still effective and executed. The ODM and the brand remain liable to perform the obligations respectively stipulated in L2 and L3. Once the patent exhaustion doctrine is triggered pursuant to the authorized sale in L1, two questions arise: (i) How to appraise the licenses in L2 and L3?; and (ii) Whether the ODM and the brand have royalty payment obligations under L2 and L3? Similar questions would appear again when the participants operate business models #2 and #3.

Since the patent exhaustion doctrine is given the status of the contract rule and also recognized as the immutable rule after being triggered by the authorized sale, it should be directly applied to the contractual relationship once triggered. Referring to the case aforementioned, the patent exhaustion doctrine is accordingly applied to L2 and L3 after the authorized sale through L1. Consequently, the licenses granted in L2 and L3 shall no longer exist in the individual transaction because the patent rights over subject components have
been exhausted by the authorized sale in L1. It is undoubted that the entire license agreements of L2 and L3 remain valid and effective between the contracting parties, but, subject to licensing provisions in L2 and L3, they should no longer be applied to the individual transaction of the components where patent exhaustion has been triggered according to L1.

Given the licensing provisions in L2 and L3 no longer exist or apply to the individual transaction of the components, it is quite clear that the ODM and the brand have no obligation to pay the royalties for such components because there is no consideration between the license and the royalty in the individual transaction. The component supplier is obligated to pay the royalty according to L1 when operating business model #1. This inference is theoretically true, but too uncertain to consider various royalty calculation manners.

There are two common royalty calculation manners. The first one is a way of calculating the royalties by the agreed royalty rate. “Royalty rates in a majority of license agreements are defined as a percentage of sales or a payment per unit.” The second manner is to fix the royalties to an aggregate amount covering the terms of the agreement that the licensee pays in advance. The concern of “duplicate royalty” in several executed license agreements appears when the royalty is collected on the royalty rate basis. Given the fact that the royalties would be calculated based on the volumes of the licensed components sold, the component supplier, the ODM and the brand are all obligated to submit respective royalty reports to the licensor. The licensor then invoices those licensees for royalty payment. Absent appropriate design and mechanism in those license agreements and royalty reports to exclude the licensed components under patent exhaustion, there is always a possibility that royalties on the same licensed components are double-paid by different licensees.

Such duplicate royalty concerns also occur with a fully paid-up license.

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80 Rinehart mentioned that patents confer only the negative right to exclude others, not affirmative rights to use and sell. See Rinehart, supra note 16, at 484. Accordingly, under patent exhaustion, the patentee’s right to exclude others from manufacturing, selling, using, and importing the patent articles are exhausted after the authorized sale. Since the patentee enjoys no right to exclude others against subject patent articles, the licensing provisions should no longer exist in the individual transaction.

81 In the event that the parties operate business model #2, the royalty payment should be made by the ODM. Also, under business model #3, the brand has the royalty payment obligation.

82 Kemmerer & Lu, supra note 72, at 2.

83 The license herein is considered to be “fully paid-up.”

84 Osborne, supra note 28, at 674 (stating that “[i]f there is no attempt to collect double royalties . . . the issue of patent exhaustion never legitimately arises.”).
where the royalty is fixed to an aggregate amount. Since all of the licensees pre-pay the aggregate amount for future shipments, they would always be exposed to a risk of “double dipping”\(^{85}\) where the licensor is rewarded more than what he should receive in an individual transaction under patent exhaustion.\(^{86}\) On the other hand, subject to confidentiality obligations in the agreements, the contracting parties are prohibited from disclosing to any third party the terms and conditions of the licensing arrangements. Moreover, disclosure of the fact of obtaining the license and the existence of the license agreements may be prohibited as well. Insufficient information and transparency among the licensees increases the possibility of duplicate royalties, and also raises the difficulty of making appropriate business arrangements. This article hereby suggests in the following section several possible approaches to reduce such concerns and risks, so that various interests would be more balanced under patent exhaustion.

IV. THE BALANCED APPROACHES

Under patent exhaustion, the “duplicate royalty” is considered an issue where several license agreements for the same patents are simultaneously executed in a supply chain. The perfect situation is that only one of the licensees in the supply chain pays the royalties for the authorized sale, while the licensor is entitled to receive the royalties according to either one of the license agreements. The market forces should generally minimize double recovery.\(^{87}\) As a consequence, two questions regarding the royalties are highlighted: (i) How to avoid duplicate royalties imposed on the same patented components?; and (ii) What royalties should be finally received by the licensor from such licensed components? This article proposes several manners to avoid duplicate royalties as the answer to the first question.

\(^{85}\) Dufresne elaborates on the Qualcomm-style license model that negotiating separate license agreements for manufacturers and purchasers increases total transaction costs. Dufresne, supra note 20, at 38. Such arrangements also create a risk of “double dipping” where the patentees might extract unwarranted compensation in the aggregate. Id. Notwithstanding, it is hereby specifically highlighted that the Qualcomm-style license is a separate licensing model in which Qualcomm expressly reserves certain patent rights in the agreements. Contrary to the Qualcomm-style license, licensing agreements like L1, L2, and L3 generally grant exactly the same licenses to all licensees without any reservation. This article borrows the concept of “double dipping” for explanation purposes.

\(^{86}\) We have to admit that the concern is theoretically true, but is very difficult to verify. In this fully paid-up license, all licensees pre-pay royalties covering all shipments in the future. Therefore, the actual royalty corresponding to the individual transaction or even per unit is unknown.

\(^{87}\) Dufresne, supra note 20, at 38-39.
As for the second, it considers the possibility of applying the “best rate” among those license agreements as a solution.

A. The Mechanism of Avoiding Duplicate Royalties

There are several ways to avoid duplicate royalties. The first manner is, from the transparency perspective, to require the licensor to publicly disclose the licensee list. All of the participants in the supply chain would know the parties who obtain the subject license and have a royalty payment obligation. This approach mitigates the consequences of the confidentiality provision in the license agreement to some extent. The transparency of licensee information helps the arrangement of the business model as well.\textsuperscript{88} The licensor is given more expectations because the licensor is the only one who is capable of controlling and managing the licensee list. Besides disclosing the licensees at the time when they procure the license, the better approach is for the licensor to diligently update and maintain the licensee list.\textsuperscript{89} Other than the licensee list, it is definitely inappropriate to disclose the executed terms and conditions of the license agreements due to the confidentiality obligation. However, the licensor should be encouraged to disclose the standard terms and conditions it proposes for license negotiation.\textsuperscript{90}

The second way is to properly design the license agreement.\textsuperscript{91} The license agreement is suggested to include an “exemption” provision to be applied to the case where the patented articles are supplied by another licensed source that triggers patent exhaustion. When the royalty is collected on the basis of the agreed royalty rate, the patented articles from another licensed source are considered as “exempt units” that are not subject to royalty payment. Such exempt units should be explicitly identified in the royalty report. Under the common practice,

\textsuperscript{88} The participants may conduct business based on the confirmed fact to reduce potential risk. For example, when the participants know that the ODM has no license, the parties may preclude business model \#2 to avoid infringement concern against the products.


\textsuperscript{91} Kieff, \textit{supra} note 57, at 315-16 (criticizing that the \textit{Quanta} decision has a serious negative effect on the patent licensing agreement and also frustrates the ability of commercial parties to strike deals over patents due to the Court’s interpretation of the “just badly written” contract. He further comments that maybe a better-written contract would have been respected by the Court.).
the licensing parties would set up the format of the royalty report by identifying the information that a licensee is required to report. Submitting the royalty report with required information is one of the licensee’s main obligations. If the licensee intends to state the exempt units in the royalty report, the volumes of the patented articles and the licensed source should be the information required. When the license agreement contains an exemption provision, together with a corresponding statement in the royalty report, the concern of duplicate royalties may be reduced to some extent.

Separate (or restricted) licensing is another approach used to avoid duplicate royalties. Since the concern of duplicate royalties arises from the patent exhaustion doctrine—the strong default rule applied by courts—the best way to eliminate such concern is to contract around the rule’s application. Having separate license arrangements, like those used by Qualcomm, is an example of patent exhaustion avoidance. Qualcomm uses a two-tiered licensing arrangement in which it licenses to chip-manufacturers the right to only make and sell patented chipsets to authorized purchasers who are then separately licensed by Qualcomm. The conditions and restrictions imposed by Qualcomm effectively contract around the patent exhaustion doctrine. A Qualcomm-style arrangement “makes sense” in light of patent exhaustion. It successfully reduces the concern of duplicate royalties by setting up permitted licensing restrictions. However, such licensing arrangements continue to run the risk of “double dipping.” An additional concern is that Qualcomm-style licensing arrangements may not reflect the licensing parties’ expectations. The licensee may prefer to bear the risk of duplicate royalties in exchange for the flexibility of selecting different business models for individual transactions through unrestricted licenses. The licensor may prefer granting unrestricted licenses in order to avoid the transaction costs associated with separate licensing arrangements. Compared to the manner of the transparency arrangement and perfect design of the license agreement, the separate licensing approach appears more complicated and controversial.

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92 The name of the licensed source should be required because it determines whether the sale constitutes an authorized sale that triggers the patent exhaustion doctrine. The volumes should be consistent with the royalty report submitted by the licensed source because the licensed source pays the royalties for such volumes.

93 Dufresne, supra note 20, at 36-37. A Qualcomm-style license is a vertical licensing arrangement in the supply chain.

94 Id. at 37.

95 Id. at 38.

96 Id. (explaining that Qualcomm executes licensing agreements by identifying authorized buyers for its licensed chipmakers in advance).
B. The Best Rate Applied

The last question when reviewing the license arrangements in a supply chain under the patent exhaustion doctrine is how to determine the royalties eventually received by the licensor for such licensed components. This issue is especially prominent when the royalties are calculated on an agreed royalty rate basis. Each participant calculates its royalties to be paid by agreed royalty rates multiplied by the sale prices of the products. Since the royalty rates may be different in respective license agreements and the sale prices may change from time to time, the royalties to be paid by different participants may vary with the individual transaction.

Under patent exhaustion, the licensor should receive royalties according to only one of the license agreements. The licensor would be happy to receive the highest royalty rate among those license agreements. On the other hand, licensees prefer to pay the lowest royalty rate to reduce costs. What is the royalty to be received by the licensor and to be paid by the licensee? This article suggests that licensees should have the right to select the best royalty rate among those license agreements. The best rate means the best business model operated with the lowest royalties in the individual transaction instead of the numerically lowest rate specified in the license agreements. Contrary to the licensee, the licensor would have no right to determine which license agreement would govern the royalty rate unless agreed to otherwise. This conclusion comes from the fact that the participants in the supply chain are in the best position to determine the appropriate business model to be applied in the individual transaction. By simulating the royalties in each business model, the participants would know which model results in the best royalty rate and then adopt such model to the individual transaction.

V. Conclusion

The Supreme Court has established the patent exhaustion doctrine since Bloomer, identifying the “first sale doctrine,” “essential feature test,” and “fair reward concept” as the substantial requirements that trigger the doctrine. The traditional status of the patent exhaustion doctrine is as an affirmative defense to an infringement claim and also as a substantive restriction on patent rights. Some scholars describe the status of the patent exhaustion doctrine as a “pliability rule” from a property rights perspective. This article admits the contract rule status

97 This issue would not occur in a fully paid-up license agreement or in the license arrangement where the royalty rate is the fixed amount per unit.
of the patent exhaustion doctrine and further considers its status as both a default rule and an immutable rule subject to the occurrence of the authorized sale.

The patentee, under the common practice, licenses the patents to all participants in a supply chain to ensure that the end products of the supply chain are fully covered by the licenses. There are several basic business models corresponding to such licensing arrangements. When the sale authorized by one license agreement triggers the patent exhaustion doctrine, it has become a default rule that the licensing provisions in other license agreements should no longer be applied to the individual transaction. However, given the fact that those license agreements remain simultaneously valid and effective, duplicate royalties are the most critical concern in common practice. Two further questions arise, including how to avoid duplicate royalties being imposed on the same patented components and the manner in which royalties from such licensed components are ultimately to be received by the licensor.

This article proposes several manners to avoid duplicate royalties. The first manner is from the perspective of greater transparency, which would require the licensor to publicly disclose its licensee list. The second is to properly draft the licensing agreement by including an “exemption” provision in the license agreement. The final way is to use separate or restricted licenses to contract around the patent exhaustion doctrine. As for the royalties eventually received by the licensor, this article suggests that the royalties be determined by the “best rate” among the parties’ business models and license agreements.