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## THE LIMITS OF LICENSING

Quanta v. LGE and the New Doctrine of Simultaneous Exhaustion

James W. Beard

The Supreme Court's decision in *Quanta Computer, Inc. v. LG Electronics, Inc.* clarifies the reach of the established doctrine of exhaustion and creates an ancillary expansion of that doctrine that I would call *simultaneous exhaustion*. In comparison to classic exhaustion, which generally establishes that patent rights are "exhausted" with respect to an individual item when the item is subject to an unconditional sale by the patentee, the doctrine of simultaneous exhaustion establishes that the same mechanism applies to *related patents* under certain specific and discrete conditions. While the doctrine thus takes the form of a clarification and expansion of existing and established patent law, it is noticeably distinct in its reach and its consequent implications to the computer technology and biotechnology industries. Thus, discussion of *Quanta* as a mere explanation of the doctrine of exhaustion falls short of according the holding its due import.

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# THE LIMITS OF LICENSING

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### INTRODUCTION

On September 25, 2007, the Supreme Court granted certiorari to review the Federal Circuit's holding in *LG Electronics, Inc. v. Bizcom Electronics, Inc.*, signaling a return to an area of patent law the Court had left untouched for almost seven decades.<sup>1</sup> In announcing its intention to address the topic of patent exhaustion, the Court continued a recent trend of granting cert to an unusually high number of patent law cases.<sup>2</sup> The classical doctrine of exhaustion generally extinguishes a patentee's rights to control the use, sale, and manufacture of finished articles embodying their invention after the article has been sold. In *United States v. Univis Lens Co.*, decided on May 11, 1942, the Supreme Court created an exception to the requirement that an article fully embody the claims of a patent to extinguish the patentee's rights, allowing patent

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<sup>1</sup> *Quanta Computer, Inc. v. LG Elecs., Inc.*, 128 S. Ct. 2109 (2008), *rev'g sub nom.* *LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364 (Fed. Cir. 2006) (certiorari originally granted, September 25, 2007, 128 S. Ct. 28 (2007)); *United States v. Univis Lens Co.*, 316 U.S. 241 (1942) (addressing patent exhaustion); *see also* Ben James, *Supreme Court to Tackle Patent Exhaustion*, IP LAW 360, Sept. 25, 2007, <http://ip.law360.com/Secure/ViewArticle.aspx?id=35869> (password protected site).

<sup>2</sup> *See* Robin C. Feldman & Kris Nelson, *Open Source, Open Access, and Open Transfer: Market Approaches to Research Bottlenecks*, 7 NW. J. TECH. & INTEL. PROP. 18 n.15, available at <http://www.law.northwestern.edu/journals/njtip/v7/n1/2/Feldman.pdf> (describing prominent patent cases granted certiorari by the Supreme Court during the 2005-2007 terms, addressing topics including the interaction of patent and antitrust law (*Illinois Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006)), the powers of licensees to challenge validity (*MedImmune, Inc. v. Genentech, Inc.* 127 S. Ct. 764 (2007)), and the strength of the nonobviousness standard in patent prosecution (*KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007))).

exhaustion to apply where the unfinished article “embodies [the] essential features of [the] patented invention.”<sup>3</sup>

Fifty years later in *Mallinckrodt, Inc. v. Medipart, Inc.*, the Court of Appeals for the Federal Circuit held that a patentee could use licensing provisions to restrict the extent of the rights conveyed by a sale, thus conditioning the sale and preventing the application of the doctrine of exhaustion.<sup>4</sup> Since then, the powers of the classical doctrine of exhaustion and the rights of a patentee to limit the rights granted to purchasers have been in conflict, and the Supreme Court has been silent on the legal limits of licensing restrictions. In *Quanta Computer, Inc. v. LG Electronics, Inc.*, decided June 9, 2008, LG Electronics (LGE) attempted to assert licensing provisions governing the sale of computer chips to disclaim the exhaustion of its patent rights for the chips’ only reasonable use.<sup>5</sup>

The holding of the *Quanta* case clarifies the power of the already established doctrine of exhaustion and creates an ancillary expansion of that rule that I would call the doctrine of simultaneous exhaustion.<sup>6</sup> In comparison to classical exhaustion, which generally establishes that a patent is “exhausted” as to an individual item protected by that patent upon the unconditional sale of that item, the doctrine of simultaneous exhaustion establishes that the same mechanism applies to *related* patents under very specific and discrete conditions. While the doctrine takes the form of a clarification and expansion of existing and established patent law, it is noticeably distinct in its extent and consequent implications to the computer technology and

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<sup>3</sup> *Univis*, 316 U.S. at 251.

<sup>4</sup> *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992).

<sup>5</sup> *Quanta*, 128 S. Ct. at 2121. *See also infra* Part II.

<sup>6</sup> *See infra* Part III.b.

biotechnology industries. Therefore, discussion of *Quanta* as a mere explanation of the doctrine of exhaustion falls short of according the holding its due import.

In Part I of the article, I consider the origins of the classical doctrine of exhaustion and the rise of the use of licensing to control the use, sale, and manufacture of patented goods and methods. Part II outlines the license agreement litigated in *Quanta* and gives a brief overview of the claimed elements and function of the patents at issue in the case. Finally, Part III turns to the potential effects of *Quanta* on patent licensing, its economic impact on the biotechnology and computer technology industries in the United States, and the potential for future Supreme Court decisions to further narrow the *Mallinckrodt* doctrine.

## I. THE RISE OF THE LICENSE

Over the last century tracing back to the decision in *Adams v. Burke*, the Supreme Court and the Court of Appeals for the Federal Circuit have grappled over the question of how much authority and control the Patent Act gives to patentees to control the manufacture, sale, and use of their products once the patentee has received some compensation for his or her invention.<sup>7</sup> The Patent Act gives inventors who successfully file and prosecute a patent application a legal protection against any other individual who “without authority makes, uses, offers to sell, or sells” their invention for a limited time.<sup>8</sup> As authored, the right conveyed by the Patent Act is *not* a positive right to use the invention; rather, it is the right to prevent others from using the invention during the patent term.<sup>9</sup> Thus, the right conveyed by the patent certificate is one of exclusion rather than a positive right to practice and utilize the invention. Even if an invention is

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<sup>7</sup> *Adams v. Burke*, 84 U.S. 453 (1873)

<sup>8</sup> 35 U.S.C. § 271(a).

<sup>9</sup> *Id.* § 271; 35 U.S.C. § 154(a)(2).

novel, non-obvious, and useful - thereby fulfilling the prerequisites for the grant of a patent - if the invention as practiced embodies the claims of another patent, then such practice will be infringement.

As a matter of policy, the Patent Act allows the patentee to prohibit the manufacture, sale, and use by others in order to encourage the development of useful technologies and sharing them with the public. The research, commercial development, and advertising costs of many inventions can reach the hundreds of millions of dollars or more.<sup>10</sup> Once brought to market, the actual cost of producing each *individual* saleable unit is often insignificant compared to the total cost of the invention's development.<sup>11</sup> Therefore, the initial per unit cost of an invention must factor in the total cost of development.<sup>12</sup> In contrast, a competitor may be able to duplicate the commercial units with relatively little research or commercial development.<sup>13</sup> Should both the inventor and competitor enter the market simultaneously, the competitor would consequently be able to sell each unit for a far lower price and thereby gain a decisive (and unfair) advantage over the inventor. If inventors could not gain a monopoly over their invention and others could practice the invention unimpeded by statutory controls, then inventors would have great

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<sup>10</sup> See Brief of the Biotechnology Industry Organization as Amicus Curiae in Support of Neither Party at 4, *Quanta*, 128 S. Ct. 2109 (No. 06-937), 2007 WL 3353009 (stating that the biotechnology industry spent \$20 billion in research and development); see also Pat Greenhorne, *Developing Drugs is a Costly Business*, BOSTON GLOBE NEWSPAPER, May 9, 2007, available at <http://www.bcbs.com/news/national/developing-drugs-is-a-costly-business.html> (stating that the total cost of developing a biotech drug, including the cost of failed product lines, is \$1 billion); Renuka Rayasam, *Bets on Biotech*, US NEWS AND WORLD REPORT, Sept. 25, 2006, at 45 (stating that the "average cost of developing a drug has risen to \$1 billion").

<sup>11</sup> See sources cited *supra* note 10.

<sup>12</sup> See James W. Beard, *Weeds in the Docket*, 90 J. PAT. & TRADEMARK OFF. SOC'Y 423, 440 (2008); see also Brief of Biotechnology Industrial Organization, *supra* note 10, at 30 (noting that the biotechnology industry is dependent on patent law systems "that protect patentee's rights . . . and that can reward the patentee's investment in the lengthy and expensive research and development process").

<sup>13</sup> See Beard, *supra* note 12, at 428-430 (describing competitors use of submarine patent and continuance applications to gain advantage over inventors)

incentive to keep the fruits of their labors to themselves as a trade secret.<sup>14</sup> To encourage the disclosure of new inventions, which in turn often facilitates the development of other inventions, the Patent Act accords the holder of a valid patent an exclusive right of control over the subject matter claimed in the patent for a period of twenty years from the date of filing.<sup>15</sup>

a. To the Point of Exhaustion

In order to recoup the costs of development,<sup>16</sup> patentees are very concerned with commercializing their patents. In return for consideration, patentees either allow the patented product to pass beyond their monopoly (via a sale) or allow others to enter the territory of their patent monopoly (via license). The simplest of these transactions is the unconditional sale. The patentee, having produced an item embodying the claimed elements, conveys a property interest in the item along with the right to use the item to a consumer. The consumer thereafter is free to use the product without fear of infringing the patent. In an unconditional sale, the right to use is accompanied by a right to practice other concomitant rights otherwise barred by the Patent Act. Specifically, after a valid and unconditional sale, patent jurisprudence has established that consumers have a right of alienation in the item. Thus, they can offer to sell and sell the item without exposing either themselves or the purchaser to liability for infringement.<sup>17</sup> Once the

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<sup>14</sup> See generally Ellen Lauver Weber, *Patenting Inventions that Embody Computer Programs Held as Trade Secrets – White Consolidated Industries v. Vega Servo-Control*, 59 WASH. L. REV. 601, 602-605 (1984) (discussing the tension between patent and trade secret protection).

<sup>15</sup> There are a few narrow statutory exceptions to this, such as an extension added to the patent term to compensate for the time it takes a drug to be approved by the FDA, or for undue delays during the patent prosecution process. See 35 U.S.C. § 156 (2000).

<sup>16</sup> The cost of development includes the cost of filing and prosecuting the patent, which can cost upwards of \$10,000. See Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1, 15 (2005) (explaining that “[t]he cost of filing a patent application with the PTO, including attorney, filing, issue and renewal fees, is between \$10,000 and \$ 30,000”).

<sup>17</sup> See *Univis*, 316 U.S. at 252 (explaining that “[t]he first vending of any article manufactured under a patent puts the article beyond the reach of the monopoly which that patent confers”).

article has passed beyond the patentee's monopoly, they can no longer control its subsequent sale or use.

This policy is known as the doctrine of exhaustion in patent law and traces its origin to the end of the 19th century in the form of a prohibition on territorial sale restrictions for patented goods.<sup>18</sup> In *Adams v. Burke*, the owner of a patent on a coffin lid assigned the limited right to make, use, and vend the lids to a company, Lockhart & Seelye, with the restriction that they could sell the lids only in the area within ten miles of Boston.<sup>19</sup> The defendant purchased the lids within the territory assigned to Lockhart & Seelye, but *used them* in an area *outside* the ten-mile perimeter.<sup>20</sup> The Court rejected the patentee's assertion that the contractual restrictions placed upon Lockhart & Seelye attached to purchasers of the lids, observing 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."<sup>21</sup> The patentee had "received his consideration, and [the article] was no longer within the monopoly of the patent."<sup>22</sup> Effectively, while a contractual limitation limited the sales territory of the assignee, the limitation was not binding on any downstream purchaser, and enforcing such a restriction exceeded the scope of both the contractual assignment and, more importantly, that of the Patent Act.

The *Adams* Court did not reach the question of whether a use or sale specifically prohibited by a license agreement with the patentee could expose a purchaser to liability. In

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<sup>18</sup> *Adams*, 84 U.S. at 458.

<sup>19</sup> *Id.*

<sup>20</sup> *Id.* at 456-57.

<sup>21</sup> *Id.* at 456.

<sup>22</sup> *Id.*

*Henry v. A.B. Dick Co.*, the plaintiff sold its patented rotary mimeograph machines labeled with express licenses prohibiting their use with paper, ink, or other supplies made by anyone other than the patentee.<sup>23</sup> The defendant sold unpatented ink to a purchaser who owned one of the patented mimeographs.<sup>24</sup> The Court found that the license properly restricted the use of the purchaser and that the defendant committed contributory infringement by providing ink in violation of the license.<sup>25</sup> The court noted that “[i]f a licensee be sued, he can escape liability to the patentee for the use of his invention by showing that the use is within his license. But if his use be one prohibited by the license, the latter is of no avail as a defense.”<sup>26</sup>

Importantly, the Court’s commentary also indicated that, not only could the patentee sever and license individually the substantive rights provided by the Patent Act (i.e., the rights to make, use, offer to sell, or sell the device),<sup>27</sup> but that the patentee could *further subdivide these rights* through the use of restrictive licenses controlling the extent of the rights conveyed.<sup>28</sup>

The restriction on a proper *purchaser’s* use established by the *A.B. Dick* court was short-lived, and a mere six years later the holding was expressly overruled in *Motion Picture Patent, Co. v. Universal Film Mfg. Co.*<sup>29</sup> The plaintiff sold a film projector labeled with a license

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<sup>23</sup> The license attached to the device read: "This machine is sold by the A.B. Dick Company with the license restriction that it may be used only with the stencil paper, ink and other supplies made by A.B. Dick Company, Chicago, U.S.A." *Henry v. A.B. Dick Co.*, 224 U.S. 1, 11 (1911).

<sup>24</sup> *Id.* at 11-12, 50-51.

<sup>25</sup> *Id.* at 49.

<sup>26</sup> *Id.* at 24.

<sup>27</sup> *Id.* at 27-28.

<sup>28</sup> *See id.* at 25-26 (noting that “the extent of the license to use which is carried by the sale must depend upon whether any restriction was placed upon the use and brought home to the person acquiring the article . . . [and] a sale, while transferring the property right in the machine, carries with it only the right to use it for practising the invention according to the terms of the license”).

<sup>29</sup> *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 518 (1917) (holding that “the decision in *Henry v. Dick Co.* . . . must be regarded as overruled” (citations omitted)).

restricting its use to the projection of films made by the patentee.<sup>30</sup> In overturning *A.B. Dick*, the Court noted that “[t]he patent law furnishes no warrant for such a practice and the cost, inconvenience and annoyance to the public” that allowing restrictive licenses on unconditional sales would create, and that any restrictions on such uses must derive from contract law.<sup>31</sup> The Court also borrowed language from *Bauer v. O’Donnell*, stating “the right to vend is exhausted by a single, unconditional sale, the article sold being thereby carried outside the monopoly of the patent law and rendered free of every restriction which the vendor may attempt to put upon it.”<sup>32</sup>

And so, the doctrine of exhaustion was born.

b. Spent

Twenty-five years after *Motion Picture Patent Co.*, the Supreme Court expanded the power of the classical doctrine by creating a narrow exception to the requirement that an article be *completed* in order to exhaust the patent rights. In *United States v. Univis Lens Co.*, the defendant, an eyeglass lens company, authored a complex set of licenses to control the rights to produce its patented prescription lenses as well as the prices of the lenses at the various stages of

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<sup>30</sup> The license provision stated, in relevant part:

The sale and purchase of this machine gives only the right to use it solely with moving pictures containing the invention of *reissued patent No. 12,192 . . .* and upon other terms to be fixed by the Motion Picture Patents Company and complied with by the user while it is in use and while the Motion Picture Patents Company owns said patents.

*Id.* at 506-07 (emphasis added). Reissued patent No. 12,192 expired on August 31, 1914, and the projector was used with film made by defendant on March 18, 1915. *Id.* at 507. Thus, the license agreement required the use of a product not protected by a patent, as seen in *Henry v. A.B. Dick Co.* See *supra* text accompanying notes 23-26.

<sup>31</sup> *Id.* at 516. See also *id.* at 513 (noting that “[w]hatever the right of the owner may be to control by restriction the materials to be used in operating the machine, it must be a right derived through the general law”).

<sup>32</sup> *Id.* at 516. See *Bauer v. O’Donnell*, 229 U.S. 1, 12 (1913) (noting that the court in *Bobbs-Merrill Co. v. Straus* interpreting a section of the Copyright Act substantively identical to the relevant section of the Patent Act, “held that the statute, in securing to the holder of the copyright the sole right to vend copies of the book, conferred a privilege which, when the book was sold, was exercised by the holder, and that the right secured by the statute was thereby *exhausted*” (citing *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339, 350 (1908) (emphasis added))).

production.<sup>33</sup> In relevant part, the lens company organized a holding company, the Univis Corporation, and transferred all its interest in the patents to the corporation.<sup>34</sup> The corporation then licensed the lens company to manufacture lens blanks for a royalty of fifty cents a pair.<sup>35</sup>

Next, the corporation established two licensing systems composed of three licenses. First, they issued licenses to wholesalers that authorized them to purchase lens blanks from the lens company, grind and polish them, and sell them to prescription retailer licensees.<sup>36</sup> A second licensing scheme authorized *finishing retailers* to purchase blanks directly from the lens company, grind and polish them, and sell them directly to customers.<sup>37</sup> Both the prescription retailer licensees and the finishing retailer licensees were required to sell the finished lenses to customers at prescribed prices.<sup>38</sup> Other than the fifty-cent royalty paid in the initial licensing transaction from the lens company to the corporation, the licensees paid no royalties.<sup>39</sup> Instead, the terms of the licenses controlled the production of the lens blanks and the prices charged to consumers.<sup>40</sup>

The federal government brought suit, alleging that the licensing scheme violated antitrust laws.<sup>41</sup> The district court found the scheme in violation of the Sherman Act and granted an

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<sup>33</sup> *Univis*, 316 U.S. at 241.

<sup>34</sup> *Id.* at 243.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* at 244.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.* at 245.

<sup>39</sup> *Id.*

<sup>40</sup> *Id.* (describing the licensing system under which the “prices prescribed and maintained . . . [were]: \$3.25 a pair for the blanks sold by the Lens Company to wholesalers, and \$4 a pair for those sold to finishing retailers; \$7 a pair for finished lenses sold by wholesalers; \$16 a pair for white, and \$20 for tinted, lenses sold to consumers by prescription and finishing retailers”).

<sup>41</sup> *Id.* at 242-43 (reviewing the government’s specific claim that the scheme violated sections one and three of the Sherman Act which makes illegal any contract, combination, or conspiracy in restraint of trade or commerce among the states) (citing Sherman Act, 15 U.S.C §§ 1, 3 (2006)).

injunction. In affirming in part the district court’s injunction against the licensing scheme, the Supreme Court held that “where 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.”<sup>42</sup> Importantly, however, the *Univis* Court expressly declined to answer the issue of what the result would be “if the finisher of a particular lens blank utilized the invention of some patent other than the patent which was practiced in part by the manufacture of the blank.”<sup>43</sup>

c. A License to Use – The *Mallinckrodt* Case

However, while *Univis* established a substantive exception to the existing doctrine of exhaustion wherein sales of an *uncompleted* article would still place the item beyond the patentee’s monopoly so long as the item embodied the “essential features” of the invention, it did not resolve the question of whether any restrictive *license* could preserve the patentee’s control over future use and sales.

In *Mallinckrodt, Inc. v. Medipart, Inc.*, the patentee, Mallinckrodt, manufactured and sold a device for the “delivery of radioactive or therapeutic material in aerosol mist form to the lungs of a patient,” as a means to diagnose and treat pulmonary diseases.<sup>44</sup> The units were sold to hospitals and inscribed with a notice that they were licensed for “Single Use Only.”<sup>45</sup> Rather

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<sup>42</sup> *Id.* at 250-51.

<sup>43</sup> *Id.* at 248.

<sup>44</sup> *Mallinckrodt*, 976 F.2d at 701. The device, sold as a unit, consisted of a nebulizer to aerosolize the material and a manifold to direct the flow of the medicated air, combined with a filter, tubing, a mouthpiece, and a noseclip. *Id.* at 702.

<sup>45</sup> *Id.* at 702 (an insert in the packaging with the device also stated that the unit was “For Single Patient Use Only” and instructed that purchasers were to dispose of the unit in accordance to rules for disposal of biohazardous wastes).

than disposing of the units after one use, some hospitals shipped them to Medipart, who sterilized and reconditioned them and then shipped them back.<sup>46</sup> The district court held that “since the hospitals purchased the device from the patentee, not from a manufacturing licensee, no restraint on the use of the device could lawfully be imposed under the patent law” and found that Medipart’s reconditioning of the spent units was not infringement.<sup>47</sup> On appeal, the Federal Circuit reversed, holding that “[u]nless the condition violates some other law or policy (in the patent field, notably the misuse or antitrust law...), private parties retain the freedom to contract concerning conditions of sale.”<sup>48</sup>

At first glance, the holdings in *Univis* and *Mallinckrodt* appear incongruous. Both involved sales by, or at least controlled by, the owner of the patent, and both sought to control the post-sale use of the product by the purchaser. The difference, as pertaining to the doctrine of exhaustion, is one of scope. In *Univis*, the Corporation had recovered the full benefit of the sale as to that *particular* item, and after the initial royalty paid by the Lens Company it would reap no more pecuniary benefit from the terms of the license regardless of how the item was used by downstream purchasers.<sup>49</sup> Conversely, in *Mallinckrodt*, the patentee’s restriction established that uses of the unit subsequent to the original use were *not* part of the consideration paid.<sup>50</sup> Therefore, the reconditioning by Medipart and the subsequent reuse by the hospitals was not covered by the original consideration, and the right to control these subsequent uses was not

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<sup>46</sup> *Id.* at 702.

<sup>47</sup> *Id.* at 703.

<sup>48</sup> *Id.* at 708 (citations omitted).

<sup>49</sup> See discussion on *Univis*, *supra* pp. 8-10.

<sup>50</sup> There has been suggestion that restrictive licensing, as seen in *Mallinckrodt*, is less likely to be found to exhaust the patent where there is an explicit policy interest (e.g., public health). See Richard H. Stern, *Post-Sale Patent Restrictions After Mallinckrodt – An Idea in Search of Definition*, 5 ALB. L.J. SCI. & TECH. 1, 6-8 (1994) (discussing the impact of *Mallinckrodt* on the doctrine of exhaustion).

exhausted by the sale. Though it seemed to be a departure from the Supreme Court's line of cases expanding the power of the doctrine of exhaustion, *Mallinckrodt* was a landmark case in patent law as it established the right of patentees to license, in whole and in part, the substantive rights to enjoy their patent monopoly.

## II. GOOD LICENSES MAKE GOOD SALES?: THE *QUANTA* CASE

With apologies to Robert Frost, the use of increasingly complicated licensing agreements to protect the rights of patent holders has become common practice in the biotechnology and computer industries, both as a means to derive maximum benefit from their intellectual property and as strategic leverage in the form of cross-licensing agreements.<sup>51</sup> Since patents convey a right to exclude rather than an affirmative right to practice, a patentee may need to obtain a license to practice other inventors' patents in order to practice his or her own invention. Large technology companies use their patent portfolios, often comprising hundreds of patents,<sup>52</sup> to negotiate rights to use other patents needed to make a commercial product.<sup>53</sup> In blanket cross-

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<sup>51</sup> See Elizabeth I. Winston, *Why Sell What You Can License? Contracting Around Statutory Protection of Intellectual Property*, 14 GEO. MASON L. REV. 93, 93 (2006); see also Markus Nolf, *The Expanded International Search Procedure: What will be the Next Step in view of TRIPS?*, 86 J. PAT. & TRADEMARK OFF. SOC'Y 717, 746 (2004) (explaining that "patents are important not only to exclude others but also as a bargain chip for cross-licensing").

<sup>52</sup> See Elaine Chow, *LG Hits Quanta with Lawsuit*, IP LAW 360, July 5, 2007, <http://ip.law360.com/Secure/ViewArticle.aspx?id=28638> (stating that LGE "holds over 5,000 international patents for DVD technologies, and even more patents for various components of personal computers"); see also generally Parchomovsky, *supra* note 16 (describing the rise in patent portfolio size for technology giants); see also *id.* at 46 (explaining that "[s]ince 1994, IBM has amassed over 25,000 U.S. patents, far more than any other company, each year ranking first on the USPTO's list of top patent earners").

<sup>53</sup> See Brief of Dell Inc. et al. as Amici Curiae in Support of Petitioners at 14, *Quanta*, 128 S. Ct. 2109 (No. 06-937), 2007 WL 3407021 (arguing that "many products and services – especially those in the computer hardware and software, aviation, financial services, telecommunications, and biotechnology sectors – incorporate inventions reflected in hundreds or even thousands of patents"); Reply Brief for Petitioners at 9, *Quanta*, 128 S. Ct. 2109 (No. 06-937), 2007 WL 4613423 (explaining that "there are tens of thousands of separately patented inventions embodied within Intel's microprocessors and chipsets"). See also Ina Fried, *Microsoft, Apple in iPod Patent Tussle*, CNET NEWS.COM, Aug. 12, 2005, [http://news.cnet.com/Microsoft,-Apple-in-iPod-patent-tussle/2100-1047\\_3-5830435.html](http://news.cnet.com/Microsoft,-Apple-in-iPod-patent-tussle/2100-1047_3-5830435.html) (quoting David Kaefer, Microsoft's director of intellectual property licensing, that "Microsoft and Apple have previously licensed their respective patent portfolios to one another and we maintain a good working relationship with Apple").

licensing arrangements, companies will cross-license their entire patent portfolios in an arrangement akin to a covenant not to sue.<sup>54</sup>

The strategic use of licensing to control the rights afforded to purchasers of patented intellectual property borrows from the realm of copyright. So-called “shrink-wrap” licenses (where the act of opening or using the product establishes acceptance of the license terms) establish privity between the owner of the intellectual property and the end user even where there is no direct contractual relationship between the two.<sup>55</sup> Whether in the form of shrink-wrap licenses or contractual restrictions between the patentee and licensees or downstream purchasers, licenses are used to transfer physical property without conveying some of the associated rights.<sup>56</sup> Licenses have become a way to control the alienation and use of intellectual property, in some cases for the public benefit by increasing the rights the patentee allows the public to use, and in others for the public detriment by allowing patentees control over their property beyond the scope afforded by patent law.

While physical shrink-wrap (or, in the electronic domain, “click-wrap”) licenses at least require some physical action by the user that can constitute acceptance of the terms, the precise requirements of what establishes valid *Mallinckrodt* restrictions have seemingly relaxed since the decision. In *Quanta*, a relatively straightforward cross-licensing scheme attempted to expressly limit the rights conveyed to downstream purchasers of technology manufactured and sold by LGE’s licensee, Intel.<sup>57</sup> It purported to limit Quanta’s right to use the CPUs purchased from

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<sup>54</sup> See *Quanta*, 128 S. Ct. at 2114 (finding that “[the Agreement] broadly permits Intel to ‘make, use, [or] sell’ products free of LGE’s patent claims” (citing Brief for Petitioners at 8, *Quanta*, 128 S. Ct. 2109 (No. 06-937), 2007 WL 3276505) (quoting Joint Appendix Vol. II at 154, *Quanta*, 128 S. Ct. 2109 (No. 06-937) (under seal))).

<sup>55</sup> See *id.* at 100-101.

<sup>56</sup> See *id.* at 101.

<sup>57</sup> See *infra* Part II.b (describing the cross-licensing agreement between LGE and Intel).

Intel merely via notice, which expressly disavowed the conveyance of any implied license to use the CPUs in a manner that infringed patents owned by LGE. The effect of the notice, by purporting to deny Quanta the right to use the CPUs in the only reasonable manner, was to impose a *Mallinckrodt* restriction on the sale of the patented articles.<sup>58</sup> In some cases, the notice was not even given until after initial sales to the purchasers.<sup>59</sup>

a. The LGE Patents

As heard by the Supreme Court, *Quanta* involved three patents owned by LG Electronics (LGE): U.S. Patent Nos. 4,939,641 ('641); 5,379,379 ('379); and 5,077,733 ('733) (collectively LGE Patents).<sup>60</sup> Each of the patents was directed towards the integration and the function of central components in a personal computer, specifically the central-processing unit (CPU), memory, and system bus.<sup>61</sup> LGE argued that the claimed elements of the patents were effectively infringed when licensed Intel microprocessors and chipsets were combined with non-Intel components in functioning computer systems.<sup>62</sup> While the non-Intel components were necessary to perform the patented methods, the LGE patents were infringed by simply installing the Intel processor, manufactured and sold under valid license, into a standard system configuration.<sup>63</sup>

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<sup>58</sup> This effect was the focus of some *amici* briefs before the court. See, e.g., Brief of the Licensing Executives Society (U.S.A. & Canada), Inc. As Amicus Curiae in Support of Neither Party, at 16, *Quanta*, 128 S. Ct. 2109 (06-937), 2007 WL 3407020 (posing the case as a question of “whether the patent exhaustion doctrine is a limitation of the patent grant itself, or it is a principle that can be overcome through policy considerations or simply notice to the buyer of patented goods”). The Society went on to ask the court for clarification of whether patent exhaustion was a “species of implied license or a limitation of the patent grant itself.” *Id.*

<sup>59</sup> See Brief for Petitioners at 9, *Quanta* 128 S. Ct. 2109 (No. 06-937), 2007 WL 3276505; see also *infra* note 87 (quoting the notice sent by Intel to purchaser’s of the CPUs).

<sup>60</sup> *Quanta*, 128 S. Ct. at 2113.

<sup>61</sup> *Id.* at 2113-14

<sup>62</sup> See Brief for Petitioners, *supra* note 59, at 4, 11.

<sup>63</sup> *Id.* at 39 (stating that “LGE contends that these patents are infringed whenever Intel’s products are combined with busses [sic] and memory to make a functional computing device”).

Modern computing systems, though available in myriad configurations and brands, invariably include several central components. The CPU serves as the “brain” of the entire system, processing virtually every command, function, and equation required by the system as a whole.<sup>64</sup> In a completed system the CPU is attached to a motherboard that connects it to all the other system components, including random-access memory (RAM), which stores the information currently in use by the system.<sup>65</sup> RAM, which is volatile and does not store information when the system is turned off, acts akin to an individual’s short-term memory by keeping the information necessary to, or in use by active processes at that moment.<sup>66</sup> A system bus, acting as the peripheral nervous system connecting the brain to the rest of the body, connects the CPU and RAM to the other components in the computer, allowing the CPU to get information from and control the rest of the system.<sup>67</sup> In addition to the system’s RAM, modern CPUs also include a small memory unit, known as a cache, on the chip itself. The cache is far

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<sup>64</sup> See S.K. BANSAL, TEXTBOOK OF INFORMATION TECHNOLOGY 5 (APH Publishing 2004) (describing the role of the CPU).

<sup>65</sup> See PENTTI KANERVA, SPARSE DISTRIBUTED MEMORY 30 (MIT Press 1988).

<sup>66</sup> See DOUGLAS M. BONIFACE, MICROELECTRONICS: THE STRUCTURE AND OPERATION OF MICROPROCESSOR-BASED SYSTEMS 30 (Albion Publishing 1996) (stating that “RAM is usually classed as volatile” and “[a] memory device is said to be volatile if its contents are lost when the power is switched off”). This is in contrast to information stored in the hard disk drives (HDDs) attached to the system, which are akin to an individual’s long-term memory. Since information can be accessed far more quickly when stored in RAM relative to HDDs, but is more expensive, systems typically include a small amount of RAM relative to the size of the hard drive. Files saved or stored on HDDs are loaded into active memory when opened by the user, and then replaced by new information when the file or program is closed and another is opened.

<sup>67</sup> See WILLIAM STALLINGS, COMPUTER ORGANIZATION AND ARCHITECTURE 78-79 (Prentice Hall 2006) (describing a typical system architecture and the integration of the processor, the system bus, system memory, and other components).

more accessible and faster than the system's RAM.<sup>68</sup> The system can use the cache to briefly store the information it is about to process or to store the results of frequently used instructions.<sup>69</sup>

Within the last few years, multi-core CPUs have become increasingly prevalent in consumer computers. Multi-core CPUs, which include multiple processing-units on a single chip, allow for "smarter" and faster systems at a lower cost than single-core chips.<sup>70</sup> However, the use of multi-core systems, each with its own cache and connection to the system RAM, presents consistency issues when each core is working with a common set of information. When a single piece of information is stored in several locations (i.e., the RAM and the cache memory of each core in a multi-core system), the system must ensure that the most updated version of the memory is used to fulfill any given request.<sup>71</sup>

The '641 Patent discloses a solution to this problem by describing a system to monitor requests for data from the main memory and, when fresher data is present in the CPU's cache memory, retransmitting the cache memory's version for use by the system.<sup>72</sup> Claim 1 of the '641

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<sup>68</sup> In computer parlance, it has a lower latency, or lag time between when the information is requested and when it is received. By reducing this latency, the time necessary to do any given computation is drastically reduced.

<sup>69</sup> See SCOTT MUELLER, *UPGRADING AND REPAIRING PCS 516* (18th ed, Que Publishing 2007) (explaining that cache memory is "a small amount of high-speed SRAM memory . . . [that] runs at speeds close to or even equal to the processor and is the memory from which the processor usually directly reads from and writes to").

<sup>70</sup> See David Znidarsic, *Perspective: Getting It Wrong on Multicore*, CNET NEWS.COM, Apr. 26, 2005, [http://news.cnet.com/Getting-it-wrong-on-multicore/2010-1012\\_3-5684658.html?tag=news.1](http://news.cnet.com/Getting-it-wrong-on-multicore/2010-1012_3-5684658.html?tag=news.1) (explaining the purpose of a multi-core CPU system, which "makes a single processor computer behave like a multiprocessor computer without taking up an additional socket"); Martin LaMonica, *Microsoft, Intel to Sponsor Multicore Development Research*, CNET NEWS.COM, Mar. 17, 2008, [http://news.cnet.com/8301-10784\\_3-9895504-7.html?tag=bl](http://news.cnet.com/8301-10784_3-9895504-7.html?tag=bl) (explaining that with multiple cores, "chip designers can boost a machine's processing muscle in a more energy-efficient way than by increasing the processor's clock speed").

<sup>71</sup> See Brief for Petitioners, *supra* note 59, at 4-5 (stating that "[m]emory coherency between a system's main memory and its cache memory is important because both the cache memory and the main memory may have data associated with the same memory address" and that the '641 patent discloses a system to transmit the most up-to-date information to a requesting device).

<sup>72</sup> See generally U.S. Patent No. 4,939,641 col.1 l.27-33 (filed June 30, 1988) (issued July 3, 1990); see also *Quanta*, 128 S. Ct. at 2113. In pertinent part, claim 1 of the '641 Patent describes:

[M]eans for detecting whether data corresponding to the address of said transferred data unit and determined to be stored in said cache memory means may be different in content from said

Patent covers the CPU in such a system, and claim 14 addresses the cache memory and manner of operation needed to monitor and transmit the most up to date information.<sup>73</sup> LGE alleged that both claims were infringed by Quanta.<sup>74</sup>

The ‘379 Patent addresses a similar solution relating to the queuing of read- and write-requests to the systems main memory.<sup>75</sup> Since the process of writing information to RAM is far slower than reading from the same, this can lead to increased latency and slow the computation process.<sup>76</sup> However, if the system processes all read-requests first, there is a risk of retrieving old “stale” data when it reads data for which there is an outstanding write-request.<sup>77</sup> To prevent retrieval of stale data, the ‘379 Patent discloses a method “allowing the computer to execute only read requests until it needs data for which there is an outstanding write request.”<sup>78</sup> This method ensures that each core utilizes the most recent data in its computation and avoids time-intensive updates to the cache until the information is needed.<sup>79</sup>

The last patent at issue, the ‘733 Patent, teaches a method to increase system efficiency by ensuring that the various system components get the most efficacious access to the system

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transferred data unit and, if so, transmitting said data from said cache memory means to said bus means for reception by the bus connection requesting the data unit.

‘641 Patent col.2 l.59-65. *See also* Brief for Petitioners, *supra* note 59, at 4-5.

<sup>73</sup> *See* Brief for Petitioners, *supra* note 59. at 5.

<sup>74</sup> *See id.* at 5 (citing Circuit Court Joint Appendix at 3671-72, 3676-77, *Quanta*, 128 S. Ct. 2109 (No. 06-937)).

<sup>75</sup> *See generally* U.S. Patent No. 5,379,379 (filed Sept. 6, 1990) (issued Jan. 3, 1995).

<sup>76</sup> *See Quanta*, 128 S. Ct. at 2113 (stating that “[p]rocessing these requests in chronological order can slow down a system because read requests are faster to execute than write requests”).

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

<sup>79</sup> *See id.* (noting that “[t]he ‘379 patent discloses an efficient method of organizing read and write requests while maintaining accuracy by allowing the computer to execute only read requests until it needs data for which there is an outstanding write request”). While this process may not appear to save time since every read-write request still occurs, the process of prioritizing read requests over write requests allows for the slower write requests to occur during off-peak cycles, thus decreasing system latency. *See id.*

bus.<sup>80</sup> Systems practicing the patented method monitor and limit each device's access to the bus.<sup>81</sup> This prevents a single device from “hogging” access to the system and preventing other devices from getting the access needed to accomplish a given task.<sup>82</sup> Claim 15 outlined the method as “counting the number of accesses” by a given device to the bus, and then “giving another [device] the highest priority.”<sup>83</sup> This method allows for devices that need frequent access to the system bus to have access, but keeps them from monopolizing access to the bus.<sup>84</sup>

b. The Licensing Agreement

The central element of the *Quanta* case was the broad cross-licensing agreement between LGE and Intel (hereinafter Agreement). Under the Agreement, LGE gave Intel a blanket right to “manufacture products that would otherwise infringe any of the patents owned by [LGE], including the patents at issue here.”<sup>85</sup> The Agreement expressly disclaimed any implied license conveyed to purchasers of Intel products if those products were combined with non-Intel products in a manner that infringed any LGE patents.<sup>86</sup> LGE and Intel entered into a second agreement, requiring Intel to send notice to identified customers (including Quanta), disclaiming

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<sup>80</sup> See generally U.S. Patent No. 5,077,733 (filed Sept. 11, 1989) (issued Dec. 31, 1991).

<sup>81</sup> *LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1375-76, (Fed Cir. 2006), *rev'd sub nom.* *Quanta*, 128 S. Ct. 2109 (stating that “[t]he asserted claims of the ‘733 patent, method claims 15-19, establish a rotating priority system that limits each device’s access to the bus” (footnote omitted)).

<sup>82</sup> *Id.* at 1376.

<sup>83</sup> *Id.*

<sup>84</sup> See *id.*

<sup>85</sup> *LG Elecs., Inc. v. Austek Computer, Inc.*, 2002 U.S. Dist. LEXIS 25956 at \*6 (N.D. Cal. 2003), *aff'd sub nom.* *LG Elecs. v. Bizcom*, 453 F.3d 1364, *rev'd sub nom.* *Quanta*, 128 S. Ct. 2109.

<sup>86</sup> *Id.* at \*6. See also Brief for Respondent at 9, *Quanta*, 128 S. Ct. 2109, (No. 06-937), 2007 WL 4244683 (quoting the Agreement that “[LG] and Intel intend and acknowledge that [LG]’s grant of a license to Intel for Integrated Circuits . . . shall not create any express or implied license under [LG]’s patents to computer system makers that combine Intel Integrated Circuits with other non-Intel components to manufacture motherboards, computer subsystems, and desktop, notebook, and server computers”).

any implied license to use LGE patents resulting from the sale of the CPUs.<sup>87</sup> Each of the defendants, including Quanta, purchased CPUs produced by Intel under the Agreement.<sup>88</sup> At trial, LGE demonstrated that the CPUs themselves did not literally infringe the LGE Patents, but instead met “many of the limitations of the patents and, when combined with other components in the accused devices, infring[ed] five of [LGE’s] patents.”<sup>89</sup>

Importantly, Quanta infringed all three patents at issue by simply combining the purchased CPUs with non-Intel, generic system components.<sup>90</sup> In doing so, they followed Intel’s explicit specifications and directions on using the chips.<sup>91</sup> LGE did not argue that there was an alternative, non-infringing reasonable use. Instead, LGE asserted that the sale of the CPUs did not give rise to any implied license to use them in the infringing fashion, because they could be

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<sup>87</sup> The notice read in pertinent part:

It has recently come to Intel’s attention that LG Electronics (LGE) has contacted you and claimed that certain of your products infringe certain of LGE’s patents. I am writing to notify you that Intel recently obtained a broad patent license from LGE. This patent license ensures that any Intel product that you purchase is licensed by LGE and thus does not infringe any patent held by LGE or any of LGE’s subsidiaries.

This patent license is consistent with Intel’s policy of standing behind its products. *Please note however that while the patent license that LGE granted to Intel covers Intel’s products, it does not extend, expressly or by implication, to any product that you may make by combining an Intel product with any non-Intel product.*

Brief for Respondent in Opposition at 7, *Quanta*, 128 S. Ct. 2109 (No. 06-937), 2007 WL 760215.

<sup>88</sup> See *LG Elecs., Inc. v. Austek Computers, Inc.*, 248 F. Supp. 2d 912, 914 (explaining that Intel manufactured and sold the CPUs as LGE’s licensee); see also Brief for Petitioners, *supra* note 59, at 3 (explaining that “[p]etitioners . . . purchase microprocessors and chipsets from Intel and incorporate them into computers and file servers in exact conformance with Intel’s specifications” (citing Petition Appendix at 39a, *Quanta*, 128 S. Ct. 2109 (No. 06-937))).

<sup>89</sup> *LG Elecs.*, 2002 U.S. Dist. LEXIS 25956 at \*7. Only three of these patents were at issue before the Supreme Court. *Quanta*, 128 S. Ct. at 2113 (stating that the LGE portfolio included three patents at issue before the court).

<sup>90</sup> Petition for Writ of Certiorari at 1, *Quanta*, 128 U.S. 2109 (No. 06-937), 2006 WL 3877339.

<sup>91</sup> Intel guards the internal structure of the chips as a trade secret, so failing to follow the directions could have rendered the chips inoperable. See Brief for Petitioners, *supra* note 59, at 3 (“Quanta has no choice but to follow Intel’s specification because it has no way of knowing the specifics of the chips’ internal designs, which Intel protects as trade secrets” (citing Joint Appendix before the Federal Circuit at 3706 ¶4, *Quanta*, 128 S. Ct. 2109 (No. 06-937))); Petition for Writ of Certiorari, *supra* note 90, at 3 (illustrating that “[p]etitioners in no way modify the chips after purchasing them and, indeed, have no choice but to follow Intel’s specifications because they have no way of knowing the specifics of the chips’ internal designs, which Intel protects as trade secrets”).

used in computers built for use outside of the United States or as replacement parts for systems already licensed to use the technology.<sup>92</sup> In holding that LGE's monopoly rights as a patentee were exhausted by Intel's sales to purchasers, the trial court did not reach the question of whether the sale of products with no reasonable non-infringing domestic use - even where notice was provided by Intel - could give rise to an implied license.<sup>93</sup>

### III. THE DOCTRINE OF SIMULTANEOUS EXHAUSTION & THE FUTURE OF LICENSING

The Supreme Court could have approached and decided *Quanta* from either of two jurisprudential theories. It could have held that patentees have expansive power to license the use of their patents, approaching the case as an extension of the right to license and thus giving force to the *Mallinckrodt* doctrine. Under this approach, the Court could have held that the Agreement was a permissible extension of the *Mallinckrodt* doctrine, or held that, while there was a valid *Mallinckrodt* power to license, the license in this case was overly broad and therefore invalid. Conversely, the Court could have approached the case in the context of the doctrine of exhaustion. The Court chose the latter approach and thereby reinvigorated the classical doctrine

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<sup>92</sup> See *LG Elecs.* 2002 U.S. Dist. LEXIS 25956 at \*38 (“LGE also argues that the Intel microprocessors and chipsets can be used as replacement parts”); see also Brief for Respondent in Opposition at 11 n.7, *Quanta*, 128 S. Ct. 2109 (No. 06-937), 2007 U.S. S. Ct. Briefs LEXIS 1251 (arguing that “[a]t a minimum, petitioners, which are Taiwan-based companies that make computers for the world market, could have used the parts to make computers for sale outside the United States, which would not infringe U.S. patents”). In the decision of the trial court, Judge Wilken observed that no decisions have held use outside the domestic states to be a reasonable non-infringing use. See *LG Elecs.*, 2002 U.S. Dist. LEXIS 25956 at \*36.

<sup>93</sup> An implied license will be inferred only where two conditions are met: first, that the device has no non-infringing use, and second that equitable considerations counsel in favor of an implied license. See *LG Elecs.*, 2002 U.S. Dist. LEXIS 25956 at \*29. The connection between implied license and the doctrine of equitable estoppel can be described thus:

One common thread in cases in which equitable estoppel applies is that the actor committed himself to act, and indeed acted, as a direct consequence of another's conduct. . . . Thus, an implied license cannot arise out of the unilateral expectations or even reasonable hopes of one party. *One must have been led to take action by the conduct of another party.*

*Bandag, Inc. v. Al Bolser's Tire Stores, Inc.*, 750 F.2d 903, 925 (Fed. Cir. 1984) (quoting *Stickle v. Heublein, Inc.*, 716 F.2d 1550, 1559 (Fed. Cir. 1983)) (emphasis added) (citation omitted).

of exhaustion, which many commentators proclaimed to be severely weakened after *Mallinckrodt*,<sup>94</sup> without expressly denying patentees the rights and privileges to license the various substantive rights.<sup>95</sup> More importantly, in addition to firmly declaring that the doctrine of exhaustion was not merely a rule that patentees could opt out of via creatively authored licenses,<sup>96</sup> the *Quanta* Court effectively expanded the unfinished-product exception to the classical doctrine of exhaustion into a discrete doctrine. Because it stems from the same logical and jurisprudential basis as classical exhaustion, I call it the doctrine of *simultaneous exhaustion*.

a. Before the Court: The *Quanta* Decision

In the decision below, the Federal Circuit had found that patent exhaustion did not apply to method patents and, alternatively, that it did not apply to abrogate infringement claims against *Quanta* because the sales by Intel were not authorized by the Agreement.<sup>97</sup> The Supreme Court disagreed with the Federal Circuit on both counts, clarifying the scope of patent exhaustion and the powers of licensing, and holding that since “the license authorizes the sale of components that *substantially embody* the patents in suit, the sale exhausted the patents.”<sup>98</sup> While the latter is of greater import to this article, the *Quanta* decision would have been a landmark case on the basis of any part of the holding.

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<sup>94</sup> See Stern, *supra* note 50, at 9-10 (introducing the argument that “the *Mallinckrodt* decision has supplanted the exhaustion doctrine in federal patent law and that, barring Supreme Court review of a subsequent *Mallinckrodt*-based decision, the traditional exhaustion doctrine is unlikely to be revived (footnote omitted)).

<sup>95</sup> See *infra* Part III.

<sup>96</sup> See Petition for Writ of Certiorari, *supra* note 90, at 8 (arguing that “[e]xhaustion has never (until now) been just a default rule that patentees could opt out of by sending a ‘notice’ to purchasers”).

<sup>97</sup> *Quanta*, 128 S. Ct. at 2113 (explaining that the lower court “held that the doctrine does not apply to method patents at all and, in the alternative, that it does not apply here because the sales were not authorized by the license agreement”); cf. *LG Elecs.*, 453 F.3d at 1369 (stating that the trial court found “the exhaustion doctrine did not apply to the method claims”).

<sup>98</sup> *Quanta*, 128 S. Ct. at 2113 (emphasis added).

*i. Clarifying Limits on Licensing*

It is relatively easy to conceptualize the effects of the doctrine of exhaustion on chattels. Where a physical article is sold, and subject to patent exhaustion, anyone can use that specific item without liability for infringement. However, the effect of patent exhaustion on method patents, which protect a process rather than a tangible item, is far more abstract. LGE argued that since the method patents were not attached to a physical object, there was no sale that could exhaust the claimed method.<sup>99</sup> Effectively, this argument amounts to a claim that only a general license to practice the elements of a method patent can prevent a user from liability, as no sale of an item practicing the patent ever conveys an implicit right to practice the attached method. Every purchaser and user of an article practicing a method patent must necessarily become a licensee, either through express contract or through a shrink-wrap or click-wrap license, in order to escape infringement liability.

The risk in such a position, as Quanta pointed out in its own briefs before the court, is that such a limitation on patent exhaustion would allow patentees to retain perpetual monopoly rights on products produced under an article patent provided that they had the foresight to include a method claim in the patent. The Patent Office allows applicants to include multiple claims in a single patent application so long as they relate to the same underlying invention, thereby enabling careful practitioners to include a method claim that would never exhaust in most patent applications for a physical article.<sup>100</sup> Apparatus and method claims “may approach

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<sup>99</sup> Transcript of Oral Argument at 27, *Quanta*, 128 S. Ct. 1209 (No. 06-937), 2008 WL 143658 (Mr. Carter G. Phillips, counsel for Respondent LGE, arguing that “the question is, what was sold here? And the only sale that was involved here was the chipsets. And there is a completely separate patent that deals with the rest of the system and that deals with the method. And nothing – and this is the key point of this. *The exhaustion doctrine only goes as far as the sale*” (emphasis added)).

<sup>100</sup> See *United States ex rel. Steinmetz v. Allen*, 192 U.S. 543, 557 (1904) (allowing method and apparatus claims on the same application); see also Brief for Petitioners, *supra* note 59, at 37 (explaining that “[a] patent may contain

each other so nearly that it will be difficult to distinguish the process from the function of the apparatus.”<sup>101</sup>

The Court noted that “[e]liminating exhaustion for method patents would seriously undermine the exhaustion doctrine.”<sup>102</sup> More importantly, they observed that nothing in “this Court’s approach to patent exhaustion supports LGE’s argument that method patents cannot be exhausted . . . . and this Court has repeatedly held that method patents were exhausted by the sale of an item that embodied the method.”<sup>103</sup> While the *Quanta* Court’s holding on LGE’s method patent claims were therefore not a drastic departure from previous jurisprudence, it was a bright-line ruling establishing the exhaustibility of method patents.

Just as importantly, however, the *Quanta* Court both clarified the scope of the classical doctrine and gave substantive power to simultaneous patent exhaustion. It did so by explicitly limiting the potential of *Mallinckrodt* licenses to privately legislate substantive powers beyond those granted by the Patent Act itself.<sup>104</sup> LGE argued that the disclaimer contained in the Agreement precluded any manner of patent exhaustion (classic or simultaneous), despite the fact that the sole basis for any licensing privity between LGE and Quanta was the notice distributed by Intel.<sup>105</sup> The Court held that because “Intel was authorized to sell its products to Quanta, the

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both apparatus and method claims directed at the same invention” (citing U.S. PATENT & TRADEMARK OFFICE, MPEP § 806.05(e) (8th ed. 2001), available at <http://www.uspto.gov/web/offices/pac/mpep/index.htm>).

<sup>101</sup> *Quanta*, 128 S. Ct. at 2118 (quoting *Steinmetz*, 192 U.S. at 559); see also John R. Thomas, *Of Text, Technique, and the Tangible: Drafting Patent Claims Around Patent Rules*, 17 J. MARSHALL J. COMPUTER & INFO. 219, 225 (1998) (claiming that “even the most novice claims drafter would encounter scant difficulty in converting a patent claim from artifact to technique and back again”).

<sup>102</sup> *Quanta*, 128 S. Ct. at 2111.

<sup>103</sup> *Id.* at 2117.

<sup>104</sup> See *infra* Part III.b; see also generally Winston, *supra* note 51, at 93 (describing licensing as a species of private legislation between parties in parallel to publicly legislated rights in the Patent Act).

<sup>105</sup> Transcript of Oral Argument, *supra* note 99, at \*37 (Mr. Carter G. Phillips arguing that “there was very specific and explicit notice provided to the purchaser at the time of the purchase that, while this clearly gives you the right to use this particular product, what it doesn’t give you (sic) the right” to infringe other patents).

doctrine of patent exhaustion prevents LGE from further asserting its patent rights with respect to the patents substantially embodied by those products.”<sup>106</sup> Thus, the *Quanta* Court established a clear standard for the limits of *Mallinckrodt* licenses. In cases where no conditions limit the manufacturer licensee’s authority to sell products, the patentee cannot use private licensing to opt-out of either mode of patent exhaustion. Where the sale from licensee to purchaser is unconditional, a private arrangement between the patentee and licensee cannot create license privity with downstream purchasers and users.

*ii. The Doctrine of Simultaneous Exhaustion*

Finally, the Court rejected LGE’s arguments that, based on *Univis*, exhaustion should be “limited to products that contain all the physical aspects needed to practice the patent.”<sup>107</sup> The Court agreed with *Quanta*, stating that *Univis* controlled the issue of patent exhaustion for the LGE Patents and the Court delved into two core teachings from the *Univis* holding.<sup>108</sup> First, the Court observed that *Univis* held that the “authorized sale of an article which is capable of use only in practicing the patent is a relinquishment of the patent monopoly with respect to the article sold” and that LGE had not advanced any reasonable non-infringing use.<sup>109</sup>

Second, the Court adopted the language of the *Univis* unfinished-products exception and expanded it into the doctrine at the heart of this article. In so doing, the Court drew from the *Univis* Court’s language holding that inventions “embod[y] the] essential features of [the]

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<sup>106</sup> *Quanta*, 128 S. Ct. at 2122.

<sup>107</sup> *Id.* at 2118.

<sup>108</sup> *Id.* at 2119 (citing *Univis*, 316 U.S. at 249-51).

<sup>109</sup> *Id.* LGE suggested that the products could be incorporated systems “sold overseas, used as replacement parts, or engineered so that use with non-Intel Products would disable their patented features,” but the Court rejected these suggestions. *Id.* at 2119 n.6 (citing Brief for Respondent, *supra* note 86, at 21-22 n.10). LGE also proposed that Intel could have disabled the patented features of the components when those components were combined with other non-Intel components. See Brief for Respondent, *supra* note 86, at 21-22 n.10.

patented invention” exhaust the rights of the patentee.<sup>110</sup> LGE asserted that the patents at issue were not subject to the unfinished-products exception to classical exhaustion because the CPUs required the additional components (i.e. the generic memory, system bus, and other standard components) in order to fulfill the literal claims.<sup>111</sup> The Court found this argument unsatisfactory, and opined that “the nature of the final step, rather than whether it consists of adding or deleting material, is the relevant characteristic.”<sup>112</sup>

Applying the logic of *Univis* to the facts at bar, the *Quanta* Court stated that, as a general principle, “[t]he sale of a device that practices patent A does not, by virtue of practicing patent A, exhaust patent B. But if the device practices patent A *while substantially embodying* patent B, its relationship to patent A does not prevent exhaustion of patent B.”<sup>113</sup> The Court then applied this principle to modified *Univis* facts, stating that if “the *Univis* lens blanks had been composed of shatter-resistant glass under patent A, the blanks would nonetheless have substantially embodied, and therefore exhausted, patent B for the finished lenses.”<sup>114</sup> Therefore, under *Quanta* in accordance with *Univis*, the test for determining if the sale of an article exhausts a given patent is whether that item *substantially embodies* the inventive features of the related patent. Where such substantial embodiment exists, such that no additional inventive step need be taken or borrowed from the related patent to complete infringement of the literal claims, the related patent or patents are simultaneously exhausted.

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<sup>110</sup> *Quanta*, 128 S. Ct. at 2119 (citing *Univis*, 316 U.S. at 250-51).

<sup>111</sup> *See id.* at 2120 (citing Brief for Respondent, *supra* note 86, at 26-27) (stating that “LGE characterizes the lens blanks and lenses as sharing a ‘basic nature’ by virtue of their physical similarity, while the Intel Products embody only some of the ‘patentably distinct elements and steps’ involved in the LGE Patents”).

<sup>112</sup> *Id.*

<sup>113</sup> *Id.* (emphasis in original).

<sup>114</sup> *Id.*

b. The Exception Becomes a Rule

When first authored, the classical doctrine of exhaustion was a powerful limit on a patentee's rights. It meant that a patentee's right to control the use of patented property following an unconditional sale was limited and that downstream restrictions would be tolerated only within the narrow scope of substantive rights granted to the patentee. In turn, *Mallinckrodt* was heralded as signaling the death of the classical doctrine of exhaustion,<sup>115</sup> and this would have been true if the *Quanta* Court had found the Agreement a permissible restraint on purchaser's rights. Having found the opposite, did the *Quanta* Court merely reaffirm the power of the doctrine of exhaustion, or did the Court's decision announce a new doctrine?

In this author's reading, the *Quanta* Court did both. On the first issue, the Court held that method patents were subject to classical patent exhaustion and that private licensing arrangements could not circumvent patent exhaustion. Thus, the Court eliminated the potential for careful patent drafting and licensing to perpetually bind the use rights of downstream purchasers. The Court thereby reaffirmed the power of exhaustion and limited the powers of private legislation to the substantive rights afforded by the Patent Act.<sup>116</sup> While as a general rule parties have an absolute freedom to contract, *Quanta* illustrates the delicate balance courts must strike when dealing with patent law. As a limited monopoly, patents already establish a binding restriction on the public at large by allowing the patentee to exclude others from practicing their invention.<sup>117</sup> Patents afford protection beyond the capacity of traditional contract law. No

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<sup>115</sup> See Stern, *supra* note 50, at 6 (stating that "a century of law under the exhaustion doctrine was abruptly swept away in *Mallinckrodt, Inc. v. Medipart, Inc.*").

<sup>116</sup> See generally Winston, *supra* note 51 (describing patent licensing as a form of private legislation that augments the public protections afforded by the Patent Act).

<sup>117</sup> See generally Giles S. Rich, *The Relation Between Patent Practices and Anti-Monopoly Laws*, 14 FED. CIR. B.J. 5, 15 (2004) (discussing definitions of "monopoly" that include patent grants); see also Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550-1800*, 52 HASTINGS L.J. 1255, 1255 (2000-

contract could purport to make non-parties liable for the use of an article or method. *Quanta* establishes that these special rights conferred to the patentee cannot be further expanded via private legislation. Parties retain the freedom to contract and license the substantive rights provided by the Patent Act, but *Mallinckrodt* licenses are constrained to the division and delegation of those rights and nothing more.

On the second element, the Court’s application of the *Univis* unfinished-product exception brought the exception to fruition as a substantive rule in its own right. Under the classic doctrine of exhaustion, a patentee’s first sale of the item placed it beyond the limits of their monopoly and their power to exclude others from using or reselling the product.<sup>118</sup> This effect is limited to the individual article sold, as the user gains no absolute right in the patent itself.<sup>119</sup> Generally, the rule only applies when the item itself is unfinished.<sup>120</sup> Under *Quanta* simultaneous exhaustion, however, a patent is exhausted so long as it substantially embodies the core inventive qualities of the claimed elements and merely requires the addition of common components or the performance of simple processes.<sup>121</sup> In a way, classical and simultaneous

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2001) (noting that one source of the modern patent system derived from “royal grants by Queen Elizabeth (1558-1603) for monopoly privileges”); cf. Simone A. Rose, *Patent "Monopolyphobia": A Means of Extinguishing the Fountainhead?*, 49 CASE W. RES. L. REV. 509, 520 (1998-1999) (discussing the misuse of patents to create unlawful monopolies).

<sup>118</sup> See *supra* text accompanying notes 29-32 (discussing exhaustion in *Motion Picture Patent, Co. v. Universal Film Mfg. Co.*).

<sup>119</sup> Amber L. Hatfield, *Patent Exhaustion, Implied Licenses, and Have-Made Rights: Gold Mines or Gold Fields?*, 2000 COMP. L. REV. & TECH. J. 1, 5 (2000).

<sup>120</sup> *Id.* at 8.

<sup>121</sup> See *Quanta*, 128 S. Ct. at 2120. Compare this with the inventorship standard in patent law, where parties are only joint-inventors if they contribute before the point of conception. After conception occurs, and only ordinary skill in the art is required to bring the product to completion, the party is not considered a joint-inventor. See *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1228 (Fed. Cir. 1994) (“Conception is complete only when the idea is so clearly defined in the inventor’s mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation”); see also 35 U.S.C. § 116 (2002) (defining inventorship); Joshua Matt, *Searching for an Efficacious Joint Inventorship Standard*, 44 B.C. L. REV. 245, 251 (2002) (arguing that “[b]ecause completed conception connotes completed invention, one who merely exhibits ordinary skill in the art and reduces an invention to practice after conception is not a joint inventor”).

exhaustion operate as sides of the same coin. Classical exhaustion serves to extinguish patent rights in articles that *are*, while simultaneous exhaustion extinguishes rights in articles that *must be*.

*i. Benefits of the Discrete Sale*

The *Quanta* decision does not expressly disavow the patentee the power to license individually or in part the substantive rights granted under the Patent Act. Instead, it requires that patentees be *clear* about the rights conveyed in a sale, and it establishes that licenses cannot extend the scope of the patent monopoly beyond the powers granted by statute. In its discussion, the Court stated that *Univis* controlled,<sup>122</sup> but this is not to say that under a different set of facts the Court could not have applied a *Mallinckrodt*-type analysis. The Court’s holding does not explicitly settle the question of whether a properly drafted license limiting a manufacturer licensee from selling to non-licensed purchasers would exhaust the patents at issue.<sup>123</sup> However, the decision was clear that where there is an *authorized* sale of an article substantially embodying the essential features of a patent, the patentee’s rights are exhausted by the sale.<sup>124</sup> When the patentee has created a licensing scheme duly restricting the right of the licensee to sell the article to sub-licensees, sales to an unlicensed purchaser would be unauthorized and fall outside the facts presented in *Quanta*.

Suppose, hypothetically, that the Agreement contained substantive limits on Intel’s capacity to act as LGE’s licensee. Rather than an unlimited right to sell to *any* purchaser, the

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<sup>122</sup> *Quanta*, 128 S. Ct. at 2119 (proclaiming unanimously “[w]e agree with *Quanta* that *Univis* governs this case”).

<sup>123</sup> See *infra* Part III.c.ii.

<sup>124</sup> See *Quanta*, 128 S. Ct. at (holding that “[b]ecause the exhaustion doctrine applies to method patents, *and because the license authorizes* the sale of components that substantially embody the patents in suit, the sale exhausted the patents” (emphasis added)); *id.* at 2122 (holding that “[n]othing in the License Agreement limited Intel’s ability to sell its products practicing the LGE Patents. . . . Accordingly, the judgment of the Court of Appeals is reversed.”)

amount paid by Intel as consideration for the Agreement was explicitly for the right to sell to LGE-licensed purchasers with permission to practice the LGE Patents. Additionally, to confer stronger liability and notice, the Agreement included a proviso establishing that sales to unlicensed purchasers *were* a breach of the agreement, and that Intel would thereby be liable for contributory infringement for the actions of the directly infringing manufacturer. Assume that all parties were given proper notice, and that the terms of the various licensing agreements were properly drafted. Under current patent jurisprudence, such an arrangement would prevent exhaustion when the manufacturer licensee sold to unlicensed purchasers, because the “manufacturer ‘could not convey to [the purchaser] what both knew it was not authorized to sell.’”<sup>125</sup> Dispositive are the restrictions placed on the manufacturer licensee, because the sale of the article must breach the licensing agreement with the manufacturer.<sup>126</sup>

In this scenario, the licensing agreement acts as an internal subdivision of the patentee’s rights and the power of the manufacturer licensee to act as surrogate.<sup>127</sup> Just as the patentee could choose to convey a patented article via license, it can restrict a manufacturer licensee to the same requirement and sales made beyond the scope of the license infringe the patentee’s monopoly.<sup>128</sup> However the *Univis* and *Mallinckrodt* decisions seem to indicate that such limitations must be for a substantive reason beyond a desire to control the use or value of the patent by downstream purchasers.<sup>129</sup> As such, a licensing scheme designed purely to control the

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<sup>125</sup> *Id.* at 2121 (citing *Gen. Talking Pictures Corp. v. W. Elec. Co.*, 304 U.S. 175, 181 (1938), *aff’d*, 59 S. Ct. 116 (1939)). In *General Talking Pictures*, the court held that the petitioner, by making sales outside the scope of its license, infringed the patents, and that the purchaser, *knowing* that the sales were outside the petitioners license, did itself infringe. *Gen. Talking Pictures*, 304 U.S. at 181-82.

<sup>126</sup> See sources cited *supra* note 125.

<sup>127</sup> *But cf. infra* text accompanying notes 167-76

<sup>128</sup> *Id.*

<sup>129</sup> See *Univis*, 316 U.S. at 252 (citing *United States v. Gen. Elec. Co.*, 272 U.S. 476, 487-89 (1926) (stating that it had no occasion to reconsider *United States v. General Electric*, which held that “a patentee who manufactures

“flow” of the patented article as it moves through downstream purchasers and extract royalties from subsequent purchasers, without any attendant policy justifications, may run against the intentions of the Patent Act and case history to date.<sup>130</sup> Under *Quanta* and *Univis*, it appears that the patentee can draft licenses controlling the *class* of purchaser and the *field* of use allowed (e.g., research work by universities but not commercialization, sales to small businesses but not corporations), but cannot extract royalties from those downstream purchasers in addition to the royalty paid by the manufacturer licensee.<sup>131</sup> While such arrangements may be permissible under *Quanta*, the Court’s holding and its treatment of the cases at the heart of the doctrine of patent exhaustion indicate that such schemes may soon be the focus of further jurisprudence.<sup>132</sup>

However, where there has been an authorized sale, the *Quanta* holding is eminently justifiable as a matter of policy and economic efficiency. Under *Quanta*, LGE is forced to extract the full value of its patents from Intel at the outset of the stream of sales. Not only is the value of the patent governing the CPU<sup>133</sup> included, but it must also account for and extract proper royalty for all patents that the CPU will *necessarily* infringe as a result of its proper use. This does not mean that, where there are multiple uses for a device, the patentee cannot draft

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the product protected by the patent and fails to retain his ownership in it can not control the *price* at which it is sold by his distributors” (emphasis added)); *Mallinckrodt*, 976 F.2d at 703 (stating that Mallinckrodt argued that “the restriction here imposed is reasonable because it is based on health, safety, efficacy, and liability considerations and violates no public policy”); see also *supra* note 50 (stating that restrictive licenses may be less likely to exhaust a patent where there is a policy interest, e.g., public health, at issue).

<sup>130</sup> See *infra* text accompanying notes 167-74 (discussing the iBiquity licensing scheme).

<sup>131</sup> See Dennis Crouch, *Supreme Court Decides Quanta v. LG Electronics*, \_\_ U.S. \_\_ (2008), PATENTLY-O, Jun. 9, 2008, <http://www.patentlyo.com/patent/2008/06/supreme-court-d.html> (observing that “[t]he practical impact is that the patentee has direct power through only the first level of the production/marketing process and [this] forces the patentee to rely on contract rather than patent rules”); see also *infra* text accompanying notes 163-65; Robin Feldman, *The Open Source Biotechnology Movement: Is It Patent Misuse?*, 6 MINN. J.L. SCI. & TECH. 117, 145-49 (2004) (describing courts’ treatment of field of use restrictions).

<sup>132</sup> See *infra* Part III.c.ii.

<sup>133</sup> Reply Brief for Petitioners, *supra* note 53, at 9 (rebutting LGE’s argument by referring to *amici* which illustrate “there are tens of thousands of separately patented inventions embodied within Intel’s microprocessors and chipsets”).

license restrictions to control the rights of use conveyed by the sale. Rather, it establishes that where there is a sole use that substantially embodies the inventive core of numerous patents, each of those patents is *simultaneously exhausted* regardless of whether the item literally infringes each of the claimed elements at the time of sale.<sup>134</sup> The value of the contribution the patent adds to the finished article is determined and levied at the most appropriate time.<sup>135</sup> This means that, at least with regards to the LGE Patents, there is only one license to draft, negotiate, and implement. Intel must still negotiate contracts for the sale with the manufacturers, but now these contracts do not need to verify the manufacturers are licensed to use the product. Instead, Intel merely negotiates a per-CPU price that includes their research, development, production, and total licensing costs.

Where a product can only be used for a *single* purpose, requiring the patentee to extract a *full* royalty for such use at the time of the first sale is far more efficient. The patentee knows the full value of the invention at the time of original sale. Even if the purpose of apportioning the cost of the royalty is to establish privity with each of the manufacturers and purchasers, such privity can still be established by *Mallinckrodt* licensing restrictions. Thus, where only one purpose exists for a product, and using the article in the manner required by this purpose infringes multiple patents, the only benefit to apportioning the value of the royalty to each

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<sup>134</sup> Compare Lindsay M. Beyer, *Still Beating the Dead Horse: Eliminating Redundant Analyses and Inconsistent Judgments for Means-Plus-Function Claims*, 2006 U. ILL. L. REV. 499, 501 (2006) (describing literal infringement as when “[a] device literally contains every element of the patent claim”); and *Winans v. Denmead*, 56 U.S. 330 (1853) (describing infringement under the doctrine of equivalents, where mere colorable differences in a given element prevent liability for infringement).

<sup>135</sup> See Brief of Dell, *supra* note 53, at 8 (explaining that “[t]he patent owner at that point has both the opportunity and the negotiating leverage to demand a payment reflecting the full value of the use of its invention over the life of the article”).

individual party in the production and sales process is to extract royalties in excess of the patent's value. Under *Quanta*, this mechanism is rightly restricted.<sup>136</sup>

In its unanimous decision, the Supreme Court also considers the some of the problems which would have resulted had LGE's patent rights not been exhausted.<sup>137</sup> If the LGE patents were not exhausted by the original sale, then purchasers and consumers of the finished computer product could also be held liable for directly infringing each of the patents at issue in the case.<sup>138</sup> *Quanta* and the other manufacturers would be liable for both direct infringement (for making and selling the infringing combination) and contributory infringement (for enabling the direct infringement by the consumer purchasers of the finished product). While it is unlikely that a consumer electronics giant like LGE would pursue individual users of a finished computer product manufactured under license for direct infringement, such a scenario exposes manufacturers to additional theories of liability and damages.

Such a result is not necessarily improper in certain circumstances, and liability should be imposed where the manufacturer took deliberate and optional steps towards an infringing configuration not required by the nature of the article sold.<sup>139</sup> Additional litigation will doubtlessly test the limits of the new doctrine of simultaneous exhaustion, specifically the issues of whether a license restricting sales to downstream licensees without attendant policy justifications can be enforced and at what point an article or method subject to a valid sale

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<sup>136</sup> Importantly, however, the mechanism was not abolished. Under a strict reading of *Quanta*, a patentee need only draft the license to the first-tier of the production process to require sales to second-tier licensees, and so on through subsequent tiers, to prevent patent exhaustion.

<sup>137</sup> *Quanta*, 128 S. Ct. at 2118.

<sup>138</sup> Petition for Writ of Certiorari, *supra* note 90, at 9-10 (suggesting that "LGE may next insist that [manufacturers] send a 'notice' informing consumers that they do not have any 'implied license' from LGE and must obtain a third license before turning any computer on").

<sup>139</sup> In *Quanta* the manufacturers produced the infringing systems by following Intel's explicit specifications for using the CPUs. Failure to follow these specifications would render the CPUs unusable. *See supra* note 91.

“substantially embodies” another patent. For now, at minimum, the standard applies where the infringement occurs as a necessary and inevitable result of the proper use of the article or method subject to the authorized sale.

*ii. A Question of Scope*

The doctrines of exhaustion and simultaneous exhaustion are powerful standards and should not be readily applicable to deprive a patentee of a legitimately awarded monopoly. While in some cases, as in *Quanta*, rights under multiple patents are inevitably implicated by a single act or product, the Patent Office generally does not award duplicative patents.<sup>140</sup> The doctrine of simultaneous exhaustion, which has the potential to divest the patentee of *multiple* monopolies, has the potential to have a far greater power and impact than the classical doctrine of exhaustion and should only be applied in narrow circumstances where such a result is both legally and equitably justifiable.

But where should the courts define this standard? The *Quanta* Court states, as a default principle, that exhaustion does not apply across patents, but rather extends beyond the literal terms of the claimed invention *only where* a single article or method “substantially embodies” the claimed elements of another patent.<sup>141</sup> However, few cases have broached the question of what is necessary to “substantially embody” the claimed elements of a patent.<sup>142</sup>

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<sup>140</sup> See 35 USC § 101 (2000); see also Brief for Respondent, *supra* note 86, at 13 (noting that “[t]he components which petitions purchased from Intel are independent and distinct products from the patented systems that petitioners now claim ‘authority’ to practice. . . . [and t]he United States Patent and Trademark Office (‘PTO’) concluded as such by issuing independent patents for the components and for the systems” (citations omitted)).

<sup>141</sup> *Quanta*, 128 S. Ct. at 2120.

<sup>142</sup> See, e.g., *Brown Bag-Filling Mach. Co. v. Drohen*, 140 F. 97, 107 (C.C.W.D.N.Y. 1905) (finding improvements in an invention “substantially embodying” the claims of another patent to be sufficient to survive a charge of invalidity for want of patentability), *aff’d in part*, 148 F. 985 (2d Cir. 1906).

In circumstances where there are multiple reasonable uses for a given article or method subject to patent, some uses permissible and others infringing, courts can look to the intent of the parties and the terms of the initial sale to determine whether the related patents are simultaneously exhausted by the sale. Where the terms of sale for the item establish no limits for use, *Quanta* would dictate simultaneous exhaustion of patents for which that article “substantially embodied” the claimed elements. Conversely, where the terms of a contract or license make clear that the article is intended for use in a manner that would not infringe a patent, only classical exhaustion would apply and exhaustion would be limited to patents fully embodied in the article itself.<sup>143</sup>

For example, suppose that Quanta had purchased the Intel CPUs for the express purpose of constructing consumer desktop computers, and that in addition to the patents at issue in *Quanta*, LGE had patents governing the queuing of read-write requests and computation processes in supercomputing arrays.<sup>144</sup> If after purchasing the chips, Quanta either repurposed the CPU chips or resold them to another manufacturer for use in constructing a massive supercomputer array in a way that infringed LGE’s supercomputing patents, this would not necessarily invoke the doctrine of simultaneous exhaustion. First, as a preliminary indicator, the infringing use was not the only reasonable use possible for the chips. Indeed, the infringing use was the less likely of the two conceivable uses. Second, the terms of the contract, indicating that the chips were for use in personal computers, disaffirms any assertion that the consideration paid

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<sup>143</sup> Cf. *Quanta*, 128 S. Ct. at 2121 (noting that nothing in the Agreement limited Intel’s right to sell to purchasers).

<sup>144</sup> Supercomputing arrays, generally speaking, combine individual computers and distribute computational processes between the individual units. Such “parallel” processing arrays are able to vastly decrease time needed for individual computations while utilizing the same components used in consumer computers, components which are mass-produced and relatively cheaper.

included the right to use the chips in a supercomputing array.<sup>145</sup> Finally, under the *Quanta* holding, the chips would not “substantially embody” the claimed elements of the supercomputing patent. While practicing the supercomputing patent might require the CPUs, the presence of other specialized requirements in a patent not included in the original terms of sale further disclaims a right to practice those elements.<sup>146</sup> Thus, where the assembly or use of a patented device not directly implicated by an original sale requires customized parts or a specialized process, the doctrine of simultaneous exhaustion would not absolve the purchaser or user from liability.

c. The Future of Licensing

As *Quanta* wound its way slowly up through the courts, it generated considerable interest from both patent practitioners and manufacturers. These groups filed numerous *amici* briefs with the Supreme Court.<sup>147</sup> While *Quanta* will enhance clarity and efficacy in contract and license drafting, it will also impact the licensing and litigation practices of the two most prominent participants in the patent system: the biotechnology and computer technology sectors.

i. *The Biotechnology Industry*

Few patents prove as valuable as those owned and utilized by the biotechnology industry. Patents procured for new drugs or genetic technologies can reap millions, even billions, of dollars in profits for the inventor. At the same time, however, the cost of developing these

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<sup>145</sup> Under this analysis, *Mallinckrodt* license language is still effective in disclaiming potential uses for an article where there are non-infringing reasonable uses.

<sup>146</sup> Though not explicit stated in *Quanta*, the increased technical knowledge needed for the construction of such a supercomputing array and the more specialized market would likely also serve as indicia limiting the applicability of simultaneous exhaustion.

<sup>147</sup> See Ben James, *Antitrust, Patent Groups Weigh in on Quanta Case*, IP LAW 360, Nov. 14, 2007, <http://ip.law360.com/Secure/ViewArticle.aspx?id=40136> (password protected site); Charles R. Macedo et al, *Will the High Court Clarify the Exhaustion Doctrine?* IP LAW 360, Jan. 16, 2008, [http://www.arelaw.com/downloads/ARElaw\\_ClarifyExhaustDoc.pdf](http://www.arelaw.com/downloads/ARElaw_ClarifyExhaustDoc.pdf).

technologies is astronomical.<sup>148</sup> Inventors and patentees in the biotechnology industry thereby have a substantial interest in strong patent protections that will prevent producers of generic variants of drug lines or users of their end product from using the technology without paying royalty. Such an incursion into their patent monopoly would prevent the recovery of their research and development costs.<sup>149</sup>

One of the most notable areas of concern raised in the *Quanta* biotechnology *amici* briefs was the risk of future litigators using the patent exhaustion doctrine to defeat license restrictions on self-replicating technology.<sup>150</sup> Over the last decade or so, the use of genetic engineering to enhance agricultural seed lines has produced crops “designed to carry insect-resistant and herbicide-tolerant traits . . . [bringing] higher yields and higher net farm returns while significantly reducing pesticide use.”<sup>151</sup> Mankind has used a remedial form of this technique, selective breeding, to facilitate the expression of certain characteristics in seed lines over centuries.<sup>152</sup> Genetic engineering both drastically shortens this timescale and increases the scope of traits scientists can add to the resulting crops. Recent advances in genetic engineering allow

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<sup>148</sup> See *supra* sources cited note 10.

<sup>149</sup> It is also worth noting that profits from successful drug lines do not only recoup research and development costs for that specific drug, but allow for the exploration of numerous drugs and treatments that do *not* result in a profitable drug or treatment. For a discussion on the dynamics of the cycle of multiple drug lines developed in parallel, see Beard, *supra* note 12, at 440 (discussing the difference between mature biotechnology companies that develop drugs in parallel and small startups that develop drugs in sequence).

<sup>150</sup> See, e.g., Brief of Biotechnology Industry Organization, *supra* note 10, at 14; Brief Amicus Curiae of the American Seed Trade Association in Support of Neither Party at 2, *Quanta*, 128 S. Ct. 2109 (No. 06-937), 2007 WL 3353100; see also generally Jason Savich, *Monsanto v. Scruggs: The Negative Impact of Patent Exhaustion on Self-Replicating Technology*, 22 BERKELEY TECH. L.J. 115, 117-23 (2007). There are notable concerns over the prospects of inadvertent infringement of such genetically-modified (GM) crops, such as when a non-GM field is germinated with pollen from a nearby GM field. The resulting seeds can carry the enhanced genes of the GM crop, and thus make the farmer liable for infringement. For a discussion on these concerns, see Drew L. Kershen, *Of Straying Crops and Patent Rights*, 43 WASHBURN L.J. 575, 579 (2004).

<sup>151</sup> Brief of American Seed Trade Association, *supra* note 150, at 3.

<sup>152</sup> *Id.* at 6. For example, modern corn “bears little resemblance to its early ancestor, teosinte . . . [and a]ncient varieties of potatoes and tomatoes were vastly different from their modern relatives . . . It was only after centuries of careful breeding that these crops were developed into the foods we know today.” *Id.*

scientists “to insert genes bearing certain beneficial or desirable traits directly into seed germplasm.”<sup>153</sup> Through this technique, scientists have created seed lines with heightened resistance to insects<sup>154</sup> and tolerance to commercial insecticides.<sup>155</sup> Soon, genetic engineering may allow for the creation of crops better able to withstand severe environmental stresses.<sup>156</sup>

However, such technologies create an inherent problem when biotechnology companies are unable to limit the transfer of substantive rights to the purchaser through *Mallinckrodt* licensing. For centuries, farmers have retained the seeds from their best and most productive plants for replanting. In genetically-modified crops the beneficial added genes are self-replicating.<sup>157</sup> As a result, if the sale of the original seed exhausts (through classical or simultaneous exhaustion) the patentee’s right to control the purchaser’s ability to retain seeds from a harvest and replant them in subsequent years, the inventor would be forced to shift the recovery of their research costs to the initial sale.<sup>158</sup> If farmers had the right to retain and replant seeds from a harvest *despite* the inclusion of patented genetic material in those crops, farmers

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<sup>153</sup> *Id.*

<sup>154</sup> *Id.* at 7 (describing “Bt” crops “genetically engineered to carry genes from *Bacillus thuringiensis* . . . a naturally-occurring soil bacterium that produces proteins toxic to some insects” and explaining that “[c]rops containing the Bt gene are able to produce those [toxic] proteins, thereby creating resistance to certain insects”).

<sup>155</sup> See *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1332 (Fed. Cir. 2006), *cert denied*, 127 S. Ct. 2062 (2007); see also Sam Schulz, *Farmer Strikes Out in Monsanto Seed Replanting Case*, IP LAW 360, Jan. 8, 2008, <http://ip.law360.com/Secure/ViewArticle.aspx?id=43452> (password-protected site) (discussing denial of certiorari to another farmer, Homan McFarling, who was found to have infringed Monsanto’s patented seed line by saving 1,500 bushels of seeds to replant).

<sup>156</sup> See Brief of American Seed Trade Association, *supra* note 150, at 10-11 (noting that “[c]urrently under development are various enhanced crops intended to withstand a range of harsh environmental conditions, such as drought-resistant and freeze-resistant crops”).

<sup>157</sup> *But see* Savich, *supra* note 150, at 117-19 (discussing the development of transgenic “genetic use restriction technology” that allows for seed-lines that self-sterilize during development to prevent the creation of seed for replanting).

<sup>158</sup> Brief of American Seed Trade Association, *supra* note 150 at 15-16; see also Brief of Biotechnology Industry Organization, *supra* note 10, at 30 (arguing that “[b]iotechnology is critically dependent on a patent law system that protects patentee’s rights in subsequent generations of seeds and cycles of biological material, and that can reward the patentee’s investment in the lengthy and expensive research and development process”).

would make only one purchase of the patented seed. Consequently, the patentee would have to recover the *entire* cost of their development in that initial sale and the cost might be too great for farmers.<sup>159</sup>

Thus, limiting the rights of farmers to retain and replant seeds containing the genetic modifications serves to protect the patentee's ability to recover the costs of development while allowing the full-use rights conveyed to purchasers via license. Under *Quanta*, such arrangements would not be impacted. Since the restricted use is limited to an internal subdivision of the full rights to use the patent at issue, and does not substantially embody additional patents,<sup>160</sup> a *Mallinckrodt* license would be a permissive limitation on the rights conveyed by the sale.<sup>161</sup>

The *amici* briefs also raise another significant concern over the power of inventors to grant limited licenses to control the use of their invention for research purposes.<sup>162</sup> Prior to the commercialization of a new drug or therapy, biotechnology companies sometimes give limited

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<sup>159</sup> Brief of American Seed Trade Association, *supra* note 150 at 16; *see also* Brief of Biotechnology Industry Organization, *supra* note 10, at 32-33 (noting that absence licensing restrictions, a patentee's entire compensation "would have to be captured in the first sale of a vial of cells, a sample of recombinant DNA, or a packet of seeds. . . . [but the] cost would be so exorbitant that few if any researchers or farmers could afford the product").

<sup>160</sup> Though, perversely, if the patentee had another patent controlling a specialized method of retaining, processing, and replanting specialized GM crop seeds, the purchaser might argue that they obtained a *limited* patent right in that related patent under *Quanta*. This is a relatively weak argument, however, as part of the basis for the *Quanta* decision was the fact the CPUs had no reasonable use outside one necessarily infringing the related patents. In such a case, the rights conveyed are internally limited to a subdivision of the full usage rights possible for the seed - i.e. the right to plant and reproduce the crop, but not the right to replant the seeds reproduced.

<sup>161</sup> *See also* Crouch, *supra* note 131 (stating that "[a]lthough the defendant won in this case, the Supreme Court gave some glimmer of hope to those hoping to limit the scope of patent exhaustion through specific licensing terms").

<sup>162</sup> *See* Brief of Biotechnology Industry Organization, *supra* note 10, at 7 (addressing a concern that "the first sale - which is often for a reduced price to permit universities and small companies to participate in research - would effectively extinguish the patentee's rights, because the purchaser would obtain, in effect, a never-ending supply of the product that it could use, sell, and market in competition with the patentee"); *cf. id.* at 9 (arguing that "early licenses and sales often do not reflect the ultimate value of the invention, but instead are a cooperative nominal exchange designed to promote further research").

licenses to universities or other companies to engage in research.<sup>163</sup> Similar to the issues presented with self-replicating technologies above, if research-only licensing limitations were prohibited and such conditioned sales conferred an absolute right of use, inventors could risk competition from the early licensees. The necessary effect of such a rule would chill early disclosures of inventions for research, and thereby slow the development of the invention itself into a commercially viable (and beneficial) product as well as other products growing from the technology.

Again, however, the *Quanta* ruling does not impact such arrangements. Research-only licensing restrictions are a species of internal subdivision rather than an external expansion of the patentee's substantive rights.<sup>164</sup> By restricting the licensee to a specific field of use<sup>165</sup> the patentee is explicitly defining which of several reasonable uses were granted to the licensee, and establishing that the consideration received was royalty for that specific field of use.<sup>166</sup>

Analogously, if LGE's license agreement with Intel had provided that - for the consideration received - Intel was not liable for infringing LGE's patents when it utilized the claimed elements for *research*, Intel and Quanta would be liable for infringement should Intel make sales embodying the patents for *commercial* purposes. Thus there is a distinction between *field* of use granted (e.g., sale for single use), permissible under *Mallinckrodt*, and *scope* of use (i.e., the extent to which the right a specific form of use would be conveyed to downstream purchasers),

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<sup>163</sup> See *id.* at 7.

<sup>164</sup> See also *infra* notes 174-77 and accompanying text.

<sup>165</sup> See Feldman, *supra* note 131, at 145-49 (describing field of use descriptions and its application by courts). Generally, "courts have allowed field of use restrictions on classes of customers to whom licensees can sell and restrictions on the kinds of objects that the patented process may be used to produce." *Id.* at 146. In *Mallinckrodt*, Mallinckrodt argued that the "field" of use was for single-use sales. *Mallinckrodt*, 976 F.2d at 703.

<sup>166</sup> Field of use restrictions limit the licensee's permissible (i.e. non-infringing) uses of the patented article. See Feldman, *supra* note 131, at 145.

impermissible under *Quanta* and *Univis*. *Quanta* simultaneous exhaustion leaves intact the right of inventors to grant limited *Mallinckrodt* licenses to fellow researchers, allowing them to expedite the research and development process while retaining their substantive monopoly rights to commercialize the product.

*ii. The Computer Technology Industry*

While the *amici* briefs for the biotechnology industry focused primary on the concerns that a single patent for a self-replicating technology could be exhausted by the first sale and that a limited research license for a nascent technology could nullify patent protections, the computer technology industry focused on the multitude of patents implicated by the production of a single computer or consumer electronic device and concern that an adverse ruling in *Quanta* could lead to the extraction of multiple royalties from upstream patentees.<sup>167</sup> If the use of a single component, such as the CPU in *Quanta*, could implicate and infringe a multitude of patents when incorporated into a system in a standard manner, the legal cost of investigating and negotiating potential infringing uses would be astronomical.

One of the two *amici* briefs defends the Federal Circuit's holding on the basis that the ability to design multi-tiered licensing schemes promotes the introduction of new technologies into the market by lowering the psychological barriers and financial risks posed to individual manufacturers in the process.<sup>168</sup> The iBiquity licensing scheme closely models that expressly held to exhaust patent rights in *Univis*. More interestingly, it presents a variation of the *Univis*

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<sup>167</sup> Brief of Dell, *supra* note 53, at 15 (noting that with “this myriad of often-overlapping patents, no technology business can review every potentially relevant patent before designing and commercializing a new product”); *id.* at 2 (noting that the “regime created by the Federal Circuit’s revision of the patent exhaustion doctrine allows each patent owner to work its way through every manufacturing chain that in any way implicates its patents, extracting a royalty for the same invention at each stage of the process”).

<sup>168</sup> See Brief of iBiquity Digital Corp. as Amicus Curiae Supporting Respondents at 16-18, *Quanta*, 128 S. Ct. 2109 (No. 06-937), 2007 WL 4340887.

and LGE licensing schemes of the species that may form the basis of future litigation involving the exhaustion doctrine. In pertinent part, iBiquity licensed the right to make chips for HD radios at the first level of the chain and the right to assemble finished HD radio units at the second level.<sup>169</sup> In contrast to *Univis*, the iBiquity scheme extracted a royalty from each licensee in the chain, and thus *Mallinckrodt* licenses would seem to allow the arrangement. In contrast to *Quanta*, the chip manufacturer licensees were only allowed to sell to receiver manufacturers, thus simultaneous exhaustion does not extinguish iBiquity's rights in the patents controlling the finished product.<sup>170</sup>

In its *amicus* brief, iBiquity argued that the bifurcation of the royalty reduced the cost of the HD radio chips to the receiver manufacturers, thereby encouraging them to purchase HD chips for assembly of the consumer product.<sup>171</sup> iBiquity further stated:

This arrangement benefits the chip manufacturer directly by lowering its royalty, and also benefits the receiver manufacturer by lowering the cost of the processor it must incorporate into every HD Radio receiver. Moreover, the receiver manufacturer does not pay for the full value of iBiquity's invention because the royalty expense is shared with the chip makers.<sup>172</sup>

As a matter of economics, this argument assumes that the receiver manufacturers make the decision to enter the market based on the cost of a single component. If the *only* costs of production were the cost of purchasing the chips - plus whatever standard parts needed to assemble a functional unit - such an argument would have weight. But downstream manufacturers must take the full cost of production into account. Assuming no transaction costs, there is absolutely no mathematical difference in cost of production (P) for the receiver

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<sup>169</sup> *Id.* at 2-3.

<sup>170</sup> *Id.*

<sup>171</sup> *See id.* at 11-12.

<sup>172</sup> *Id.* at 12.

manufacturers between paying the cost of producing a chip (C) subject to a bifurcated royalty to both manufacturing tiers ( $R_{\text{chip}}$  to the chip manufacturers and  $R_{\text{receiver}}$  to the receiver manufacturers) and charging the full royalty ( $R_{\text{chip}} + R_{\text{receiver}}$ ) to chip manufacturers:

$$\begin{aligned} P &= R_{\text{receiver}} + (C + R_{\text{chip}}) \\ &= C + (R_{\text{chip}} + R_{\text{receiver}}) \end{aligned}$$

There is no reason to doubt the capability of manufacturers to perform this calculation in determining the profitability of entering into the receiver manufacturing market, and thus little credence should be given to this argument.

Additionally, since a bifurcated royalty scheme requires authoring two licensing agreements, there are increased associated transaction costs. The argument positing that the lower royalty costs to chip manufacturers serve to increase participation has more validity,<sup>173</sup> but this again ignores downstream effects on the manufacturer's decision to enter the market. Royalty payments to a patentee make up only a part of the costs to manufacture such chips, with the cost of raw materials, labor, and distribution comprising a significant portion as well. Given the various costs of entering a manufacturing line, the effect of paying the full cost of the royalty, compared to a fraction combined with the other attendant costs, would have relatively little effect. Chip manufacturers would still seek to ensure they arranged for sales to receiver manufacturers *before* retooling their production lines and producing the chips. More importantly, the elimination of the risk of infringement for downstream purchasers allowed by *Quanta* simultaneous exhaustion - a powerful protection, especially in new markets - and the reduction in transaction costs are significant incentives. Thus, the transfer of the full costs of the royalty to the first practitioner is likely to prove a relatively insignificant deterrent to bringing

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<sup>173</sup> See *id.* at 12.

new technologies to market, especially when weighed against the incentive provided by the substantive protections of the Patent Act itself.

Although such a licensing scheme seems to run against *Quanta* and *Univis*, the *Quanta* Court relied on the fact that “[n]othing in the License Agreement limited Intel’s ability to sell its products.”<sup>174</sup> Because the iBiquity scheme limits sales to receiver manufacturers, it is not expressly invalidated. However, the prevalence of patent cases during the 2007 term suggests a decision on this issue may be forthcoming. The cases addressing patent exhaustion to date indicate that patentees can use licenses to control the markets open to licensees,<sup>175</sup> but the *Quanta* Court’s treatment of that case history suggests it may limit the ability of patentees to limit the transfer of rights via *Mallinckrodt* licenses in future cases.

Applying *Quanta* simultaneous exhaustion in light of the Court’s interpretation of prior case history, it appears that such a limitation is likely. In some cases, tiered licensing schemes seek to preserve the patentee’s rights granted by the Patent Act, despite the division and delegation of the article’s production to various actors. For example, suppose a patentee assigns the right to produce a patented component to a component licensee, and requires by license that the component licensee sell only to licensed manufacturers. In turn, these manufacturer licensees are limited to sales to a particular class of purchasers (e.g., university researchers, wholesalers, consumers, etc.). In this situation, the licensing scheme aims to preserve the identity of the patentee’s rights and intent to introduce the product into the marketplace. The licenses create the necessary privity through the line of production to ensure the finished product enters a limited market as intended by the patentee.

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<sup>174</sup> *Quanta*, 128 S. Ct. at 2122.

<sup>175</sup> See generally, *Univis*, 316 U.S. at 251, 54; *General Talking Pictures*, 304 U.S. at 179-83.

Conversely, if the manufacturer licensees had no restrictions on sale, that is, if they were allowed to sell the finished product fully embodying the patent to any party, the analysis shifts. Rather than preserving the identity of the patentee's substantive right to limit the use of products subject to its monopoly as it moves through the production cycle, the scheme now serves to extend the patentee's control throughout the process of production, or, more odiously, to extract duplicative royalties. In such an arrangement, the licensing scheme extends the patentee's beyond those afforded by the Patent Act.

Under this theory, the iBiquity scheme would be invalid. The chips would have no reasonable non-infringing use other than integration into a receiver, and the chips would contain the inventive elements of the patent. As the licensing scheme does not purport to limit the markets open to the manufacturers, the restriction on sales would be invalid and both classical and simultaneous exhaustion would operate to extinguish the patentee's rights.<sup>176</sup> Conversely, if the receiver manufacturers were restricted by license such that they could only sell the finished product in a given sub-market, such a downstream *Mallinckrodt* license would be permitted and sales outside the scope of the license would not invoke exhaustion. Sales by the chip manufacturers to an unlicensed receiver manufacturer - one that might sell the finished product in *any* market - would also constitute infringement. A narrower interpretation of *Mallinckrodt*, in light of the *Quanta* Court's holding and interpretation of prior exhaustion cases, is that

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<sup>176</sup> See *Univis*, 316 U.S. at 254. The *Univis* Court stated that even if the licensing scheme was designed to ensure the selection of licensees that were sufficiently skilled;

[T]hese features are so interwoven with and identified with the price restrictions which are the core of the licensing system that the case is an appropriate one for the suppression of the entire licensing scheme even though some of its features, independently established, might have been used for lawful purposes

*Id.*

*Mallinckrodt* licenses are only valid when preserving the patentee's intent to introduce the patented article into the market.<sup>177</sup>

#### IV. CONCLUSION

The Supreme Court's holding in *Quanta* brought much-needed clarification to the balance of patentee and purchaser rights. The proliferation of complex, multi-tiered licensing schemes introduced uncertainty into the production and commercialization of new inventions while producing negligible, if any, benefits to the public. Even more onerous, however, was the potential for licensing provisions, like those at issue in *Quanta*, to impose liability on downstream *consumer* purchasers. Although it is exceedingly unlikely that a patentee corporation would file suits alleging direct infringement against individual customers, due to the substantial cost of patent litigation relative to the small recovery against a consumer, such direct infringement by consumers exposes manufacturers to potential liability for *every stage* of the manufacturing, distribution, sales, and use process.<sup>178</sup> Patentees could thereby obtain duplicative royalties for an individual patent, by carefully drafting patent applications to cover separate but necessarily consequent stages of the same process or use.

The doctrine of simultaneous exhaustion described in this article serves the interest of legal economy (by requiring clearly drafted contracts and licenses), the patentee (by preserving the right to internally subdivide the substantive rights afforded by patents via *Mallinckrodt* licenses), and the public at large (by preventing liability for infringement where the article was

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<sup>177</sup> This assumes that, in a future case addressing such a licensing scheme, the Supreme Court declines to overturn the *Mallinckrodt* decision.

<sup>178</sup> See Brief of Dell, *supra* note 53, at 2 (stating that “[a]mici have learned that respondent [LGE] already is imposing a similar limitation on the ‘license’ that it is granting to the former defendants to this action that have settled with respondent. . . . [and that] amici have every reason to believe that if the Federal Circuit’s decision is permitted to stand, respondent will seek to require amici to pay yet a third royalty for the same articles”).

used for an intended and inevitable purpose). The limits of this doctrine and of its use as a defense in patent infringement suits remains to be explored by future cases and articles. However, by holding that a patent can be simultaneously exhausted where there is an authorized, unconditional sale of an article that substantially embodies the patent's claims, and establishing that patentees cannot license beyond the rights of the Patent Act, the *Quanta* Court appears to have moved the balance of rights between the rights of patentees and the public closer to equilibrium.