ELIMINATING VALUE OF INFRINGEMENT: AN ECONOMIC ANALYSIS OF INTERNAL TRANSACTIONS AND INDIRECT EXTERNAL TRANSACTIONS IN SOFTWARE INFRINGEMENT CASES

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INTRODUCTION

The value of an object can change practically overnight. Pet rocks, bell bottom jeans, and even M.C. Hammer all commanded premium prices at one point in time. Just as quickly as all these phenomena soared to the tops of their respective markets, consumer demand changed and these once priceless commodities were all but worthless. The whimsical nature of consumers sheds some light on the activity of copyright infringers. Infringers always seek to profit from their doings, but they are willing to change the means by which they obtain this profit. It is likely anyone opening a pet rock store today would be laughed out of town. So what should happen when a court applies an out-of-style damage model to a modern problem? Unfortunately, this is the case with software infringement. Software infringers have figured out how to significantly profit from transactions other than those transactions upon which courts base copyright remedies. Now courts are struggling with damages, and it is imperative to reexamine the very nature of copyright to seek solutions.

This article will identify the transactions involved in copyright and present the proper damage model to assess damages. Part I discusses

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damages in copyright law. Part II analyzes the evolution of value of use damages. Part III presents the various transactions involved in copyright. Part IV examines economic justification for awarding value of internal transactions and value of indirect external transactions. Part V will present the appropriate damage model for software infringement cases. These goals will be accomplished by focusing on the value of infringement rather than the value of copyright.

I. DAMAGES IN COPYRIGHT LAW

Damages in copyright actions serve the twin purposes of compensating the owner for infringement and eliminating any unjust enrichment gained by the infringer.[1] Under the Copyright Act, the owner may recover his or her actual damages caused by the infringement and profits of the infringer not accounted for in computing actual damages.[2] Neither the Copyright Act nor the accompanying legislative history provides a concrete definition of actual damages.[3] The standards have been developed through case law.[4] The standard measure of actual damages is the extent to which the infringement injures the market value of the copyright.[5] Often courts will assess this value in terms of a license fee.[6] Damages based on licensing fees, or value of use damages, are market value calculations.[7] Particularly with software, the lost license fee has emerged as the dominant form of awarded damages.[8] Copyright owners can recover for lost market

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1 Melville B. Nimmer & David Nimmer, *Nimmer on Copyright* vol. 4, § 14.01[A] (M. Bender & Co. 2003).

2 17 U.S.C. § 504(b) (2000).

3 Ian N. Feinberg & Karen K. Williams, *Injunctive Relief Based on Infringing Intermediate Copying: Reflections on Sega and Atari*, 10 No. 12 Computer Law. 12, 17 (1993).

4 *Id.* (noting that "[c]ase law provides some guidelines" for defining actual damages).

5 *Rainey v. Wayne St. U.*, 26 F. Supp. 2d 963, 970 (E.D. Mich. 1998); *Baker v. Urb. Outfitters, Inc*., 254 F. Supp. 2d 346, 356 (S.D.N.Y. 2003).

6 *Polygram Intl. Publg. v. Nevada/TIG, Inc.*, 855 F. Supp. 1314, 1335 (D. Mass. 1994); *Country Rd. Music, Inc. v. MP3.com, Inc.*, 279 F. Supp. 2d 325, 331 (S.D.N.Y. 2003).

7 Andrew W. Coleman, *Copyright Damages and the Value of the Infringing Use: Restitutionary Recovery in Copyright Infringement Actions*, 21 AIPLA Q.J. 91, 96 (1993).

8 *See* Ralph S. Brown, *Civil Remedies for Intellectual Property Invasions: Themes and Variations*, 55 L. & Contemp. Probs. 45 (1992); *infra* § II (discussing evolution of value of use damages).

opportunity, but the owner must show he was ready to exploit such opportunities.[9]

Awarding the owner the infringer's profits serves a deterrent effect.[10] "Copyright infringement, unlike patent infringement, is an intentional tort . . . ."[11] Forcing the infringer to turn over its profits (even when that level of profit exceeds the owner's loss) discourages infringement and encourages negotiation.[12] The owner is limited to recovering profits that "are attributable to the infringement."[13] The copyright owner only carries the burden of proving the infringer's gross revenues from infringement; the infringer then carries the burden of proving deductible expenses.[14]

At any time before final judgment, the copyright owner may elect to recover statutory damages instead of proving actual damages and profits.[15] The statutory damage award must fall within the range of $750 to $30,000.[16] If the owner proves willful infringement, the statutory damage award may be increased to $150,000.[17] Certain limitations, however, apply to statutory damages.[18] First, to qualify for statutory damages, the owner must have registered the copyright either (1) before the infringement occurred, or (2) after the infringement occurred but within three months of first publication.[19] Second, only one statutory award is permitted per article infringed.[20] Even if the infringer makes 10,000 copies of the article, the owner is only entitled to one statutory award.[21] Statutory damages alleviate the owner's burden of

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9 Jay Dratler, Jr. & Danielle Conway-Jones, *Intellectual Property Law: Commercial Creative and Industrial Property* vol. 2, § 12.02[1][b] (L. J. Seminars Press 2003) (citing *Fitzgerald Publg. Co. v. Baylor Publg. Co*., 807 F.2d 1110, 1118 (2d Cir. 1986)).

10 Coleman, *supra* n. 7, at 93 (quoting H.R. Rpt. 94-1476 at 161 (Sept. 3, 1976)).

11 *Bucklew v. Hawkins, Ash, Baptie & Co.*, 329 F.3d 923, 931 (7th Cir. 2003).

12 Roger D. Blair & Thomas F. Cotter, *An Economic Analysis of Damages Rules in Intellectual Property Law*, 39 Wm. & Mary L. Rev. 1585, 1646 (1998).

13 17 U.S.C. § 504(b).

14 *Id.*

15 *Id.* at § 504(c)(1).

16 *Id.*

17 *Id.* at § 504(c)(2).

18 *Id*. at § 412.

19 *Id.*; James E. Hawes, *Copyright Registration Practice* § 23.9 n. 1 (2d ed., West 2003) (citing *Pelican Engr. Consultants, Inc. v. Sheeley*, 2000 U.S. Dist. LEXIS 12577 (M.D. Fla. 2000)).

20 Terence P. Ross, *Intellectual Property Law: Damages and Remedies* § 2.02[3][h][iii] (L. J. Press 2003).

proving actual damages; courts base the statutory damages award by examining the infringer's profits and the owner's lost revenues."[22]

It is clear that copyright law protects an author's expression. Copyright damages, however, have always been assessed in terms of the infringer's *use* of that expression.[23] The protected copyright is an intangible expression fixed in a tangible medium.[24] In the traditional instance of copyright infringement, that intangible expression is fixed into a new medium. Damages are predicated on use of the infringing medium.[25] Consider an infringer that makes and sells ten copies of an author's copyrighted book. Damages are calculated by the use made of the infringing copies, either by the author's lost sales of ten copies of the book or the infringer's profits from selling the ten copies.[26] Such use requires transactions with third parties.

The difference with software is the new tangible medium created by the infringer. The infringer installs the infringing software to enhance the use of the infringer's hardware. The infringer benefits through faster operations, more organized data, or whatever else the new software allows the hardware to accomplish. The infringer, however, is not forced to enter into transactions with third parties to derive value from the infringement. The infringer has gained intangibles such as efficiency or organization, which is applied to the infringer's business or personal use. The infringer of software realizes the same sort of gain as the infringer of a book, but it is more difficult to quantify that gain. As a result, software has created a ripple in the copyright damage model. Courts initially addressed this problem with the advent of value of use damages.

II. VALUE OF USE DAMAGES

Deltak, Inc. v. Advanced Systems, Inc.[27] is the seminal case addressing value of use damages.[28] As with most subjects of law, it is

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21 *Id.*; *see* Peter Thea, *Statutory Damages for the Multiple Infringement of a Copyrighted Work: A Doctrine Whose Time Has Come, Again*, 6 Cardozo Arts & Ent. L.J. 463 (1988) (contending a multiple statutory award for multiple infringement better achieves the goals of the Copyright Act).

22 Ross, *supra* n. 20, at § 2.02[3][b].

23 17 U.S.C. § 504.

24 17 U.S.C. § 102(a).

25 *Id*. at § 504.

26 *Id.*

27 767 F.2d 357 (7th Cir. 1985).

important to first examine the history of this damage model. Value of use damages came into being from a basic principle of copyright law: often the infringer's gain will exceed the owner's loss.[29] Thus, copyright infringement will at times yield a positive-sum game.[30] One view is to realize that the owner can be rewarded with the infringer still realizing a net gain.[31] The other view is to consider it unjust for one to appropriate the fruits of another's labor, i.e. reap what another has sown.[32] Value of use damages were developed in adoption of the former view as a response to this principle. Three distinct eras (for lack of a better term) in the development of value of use damages can be identified as follows.

A. Developing Value of Use Damages (1928-1983)

In April 1927, the *Atlantic Monthly* published an article about then governor of New York, Alfred E. Smith.[33] The magazine published this article to open the door for Governor Smith to submit a reply article to support his pending campaign for the presidency.[34] The *Atlantic Monthly* and Smith reached an agreement where *Atlantic Monthly* would have rights of first publication, but then the article would be given to the entire press.[35] Newspapers across the country were hungry to obtain a copy of the article before it could be published by *Atlantic Monthly*.[36] The *Boston Post* bribed an *Atlantic Monthly* night watchman to steal a copy of the article.[37] With the fraudulently obtained article, the *Boston Post* published the article before *Atlantic Monthly*.[38] The court found the money value of Governor Smith's reply for exclusive first publication was $10,000.00.[39] The court reached this

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[28] *See id.* (holding that the value of infringer's use was a permissible basis for estimating actual damages); *infra* § II.A (discussing the evolution of value of use damages).

[29] Coleman, *supra* n. 7, at 98.

[30] Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutionary Impulse*, 78 Va. L. Rev. 149, 188 (1992).

[31] *Id.*

[32] *Id.* at 166-67.

[33] *A. Mthly. Co. v. Post Pub. Co.*, 27 F.2d 556, 557 (D. Mass. 1928).

[34] *Id.*

[35] *Id.*

[36] *Id.*

[37] *Id.* at 558.

[38] *Id.*

[39] *Id.* at 560.

figure by concluding that the Post would have gladly paid $10,000.00 for the article.[40] The court also found an additional $13,500.00 in damages for disruption in the May issue of *Atlantic Monthly* caused by the infringement, bringing the total award to $23,500.00.[41]

In *Nucor Corp. v. Tennessee Forging Steel Service, Inc.*, Nucor held a common law copyright on its architectural plans for its Grapeland plant.[42] Tennessee Forging subsequently acquired architectural plans from former employees of Nucor that infringed Nucor's copyright.[43] The court determined that Tennessee Forging had used the Grapeland plans, and Nucor was entitled to damages of the fair value of those plans.[44] The court defined fair value as "the market value of the architectural plans."[45] The *Nucor* ruling was adopted in a subsequent architectural drawing case, *Aitken, Hazen, Hoffman, Miller, P.C. v. Empire Construction Co*.[46] Aitken, a professional architectural and engineering firm, brought suit against several construction companies and an engineer for infringement of copyrighted architectural plans.[47] Relying on *Nucor*, the court held Aitken was entitled to recover the fair market value of its architectural plans.[48]

These early cases provide minimal analysis. Apparently these courts focused on fair market value as a component of the owner's actual damages. These cases seem to regard market value or fair value as what the infringer would have paid to the owner. The Ninth Circuit emphasized this view and offered the first definition of value of use. In *Sid & Marty Krofft Television Productions, Inc. v. McDonald's Corp.*[49], Sid and Marty Krofft owned the popular H.R. Pufnstuf television show.[50] Needham, Harper & Steers, Inc., an

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40 *Id. Atlantic Monthly* technically lost this case because it filed a bill in equity rather than an action at law. Even though the bill was dismissed, Judge Morton was essentially giving an advisory opinion on the proper amount of damages should *Atlantic Monthly* proceed in an action at law.

41 *Id.*

42 *Nucor Corp. v. Tenn. Forging Steel Serv. Inc.*, 513 F.2d 151, 152 (8th Cir. 1975).

43 *Id.*

44 *Id.* at 153.

45 *Id.* at 153 n. 3.

46 542 F. Supp. 252, 263 (D. Neb. 1982).

47 *Id.* at 253.

48 *Id.* at 263.

49 562 F.2d 1157 (9th Cir. 1977) (district court decision on remand did not address value of use); *see Sid & Marty Krofft TV Prods., Inc. v. McDonald's Corp.*, 1983 WL 1142 (C.D. Cal. 1983)).

50 *Sid & Marty Krofft*, 562 F.2d at 1161.

advertising agency, contacted the Kroffts on behalf of McDonald's.[51] McDonald's wanted to run an advertising campaign based on H.R. Pufnstuf, called the McDonaldland project.[52] Needham later told the Kroffts the advertising campaign had been canceled, although the McDonaldland project was in full production.[53] The McDonaldland project was so successful that McDonaldland characters replaced H.R. Pufnstuf characters for sponsorships and endorsements.[54]

Prior to the trial, both parties signed the Pre-Trial Conference Order.[55] This order removed from the jury any consideration of McDonald's profits.[56] On appeal, McDonald's challenged Jury Instruction No. 49:

> If you find that defendants infringed plaintiffs' copyright, plaintiffs are entitled to all of the damages, if any, suffered as a result of such infringement. In arriving at any such damages, you may take into consideration the reasonable value, if any, of plaintiffs' work including the publication and republication rights therein, and the value, if any, to defendants of the use of plaintiffs' works.[57]

McDonald's argued the value of use reference in the instruction "is equivalent to defendant's profits from the infringement."[58] In other words, McDonald's contended that value of use is duplicative of defendant's profits.[59] The court disagreed:

> The value of use reference in Instruction No. 49 is defined as a part of the reasonable value of plaintiffs' work. It amounts to a determination of what a willing buyer would have been reasonably required to pay to a willing seller for plaintiffs' work. That is a different measure than the determination of defendants' actual profits from the infringement. An author might license the use of his copyright either for a lump sum based on the reasonable value of the work or for a royalty derived from the licensee's profits, or for a combination of both.[60]

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51 *Id.*

52 *Id.*

53 *Id.*

54 *Id.* at 1162.

55 *Id.* at 1173.

56 *Id.* at 1173 (McDonald's argued its profits were obtained by selling food, and the plaintiffs had no right to these profits. The plaintiffs evidently conceded this, intentionally or not, by signing the Order).

57 *Id.* at 1174.

58 *Id.*

59 *Id.*

60 *Id.*; *see also Frank Music Corp. v. Metro-Goldwyn-Mayer, Inc.*, 772 F.2d 505, 513 n. 6 (9th Cir. 1985) (using the *Krofft* test to approximate what a reasonable market price was for use of copyrighted songs at time of musical play production).

The court held value of use damages are not duplicative of defendants' profits, and Jury Instruction No. 49 did not submit defendant's profits to the jury.[61]

The stage was finally set for value of use damages to emerge in copyright law. The Seventh Circuit took the lead and established value of use damages in *Deltak, Inc. v. Advanced Systems, Inc*.[62] Deltak featured a product called the Career Development System (CDS).[63] Part of the CDS product was a Task List on each page of a pamphlet.[64] Within the Task List were two lists.[65] The left side of the page provided a list of data-processing tasks that companies might want to teach their programmers.[66] The right side of the page provided a list of materials Deltak sold for each task.[67] Advanced Systems, Inc. (ASI) created a product similar to CDS.[68] ASI infringed the lists of data-processing tasks from Deltak, even using the identical language Deltak had used.[69] ASI, however, changed the materials sold lists to feature products sold by ASI rather than Deltak.[70] ASI produced fifty copies of the infringing document but only distributed fifteen to customers.[71] The court held, "[t]he value of the infringer's use is a permissible basis for estimating actual damages."[72] The court defined value of use as the acquisition cost saved by infringement instead of purchase.[73] Deltak argued the value of use should be $250,000.00 (50 copies x $5,000.00 list price).[74] The court rejected this approach and held Deltak could only recover value of use for the fifteen copies actually used by ASI.[75] Additionally, the court distinguished value of use from a reasonable royalty rate:

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61 *Sid & Marty Krofft*, 562 F.2d at 1174.

62 767 F.2d 357, 361 (7th Cir. 1985).

63 *Id*. at 358.

64 *Id*.

65 *Id*.

66 *Id*.

67 *Id*.

68 *Id*.

69 *Id*.

70 *Id*. at 359.

71 *Id*.

72 *Id*. at 360-61.

73 *Id*. at 361.

74 *Id*. at 360.

75 *Id*. at 364.

> We recognize that there are similarities between the concepts of reasonable royalty in patent law and value of use as saved acquisition cost in copyright law, but the two are not identical. Reasonable royalties are used when actual damages or profits are not provable, but value of use is a form of actual damage, not a substitute to be used when no type of damage or profit can be proved.[76]

Thus, the court acknowledged that value of use damages are not a new measure of damages created by the courts. Rather, it is the owner's actual damages in the form of lost sales to the infringer.[77]

By defining value of use as saved acquisition costs, the Seventh Circuit appears to have adopted the same approach as the Ninth Circuit. First, the Seventh Circuit took the same stance that value of use damages are the owner's actual damages rather than the infringer's profits. Second, it is difficult to consider how saved acquisition costs differ from the willing buyer-willing seller test pronounced in the Ninth Circuit. As Coleman noted, the value of use damages expressed in *Deltak* is "based on the willing buyer-willing seller test enunciated in *Sid & Marty Kro[f]ft*."[78] An important distinction exists. In *Deltak* the court awarded damages at the retail price. Under the willing buyer-willing seller test, the proper amount would be something less than the market retail price. At first blush, this difference seems trivial. However, it shows that the *Deltak* court developed a damage model based somewhat on the willing buyer-willing seller test that awarded damages in excess of any amount that would be set by the willing buyer-willing seller test.

B. Initial Disapproval and Speculative Proof (1988-2000)

Only one case has ever directly criticized *Deltak*'s rationale for value of use damages. *Business Trends Analysts, Inc. v. The Freedonia Group, Inc.*,[79] dealt with infringement of a study of the robotics industry. In 1985, Business Trends (BTA) marketed, at a price of $1,500.00, a study entitled *3547 Robotics (Markets and Competitors*).[80] Meanwhile, the Freedonia Group (TFG) began marketing its study, *Industry Study 113: Robotics*, at $1,500.00.[81] TFG had only negligible sales and reduced the price of its study

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[76] *Id.* at 362 n. 3 (citation omitted).

[77] *Id.* at 362.

[78] Coleman, *supra* n. 7, at 96.

[79] 887 F.2d 399, 400 (2d Cir. 1989).

[80] *Id.* at 401.

[81] *Id.*

to $150.00, selling a total of thirty-seven copies.[82] At the conclusion of the bench trial, Judge Conboy found TFG's study infringed the BTA study.[83] TFG's net profits on its sales were determined to be $4,078.35.[84] Judge Conboy determined TFG's drastic price-cutting in order to gain market advantage generated non-cash profit equal to the $1,500.00 list price set by BTA less $150 for each copy sold.[85] He awarded this non-cash profit plus normal profits.[86] Thus, Judge Conboy's model was: ($1,500.00 - $150.00) x 37 + $4,078.35 = $54,028.35.[87]

On appeal, the Second Circuit rejected the value of use damage model:

> TFG no more priced the BTA study and then decided to copy than a purse-snatcher decides to forgo friendly negotiations. BTA did not, because of the infringement, lose sales that it would have made to TFG, and TFG did not save money that it would have paid to BTA for copies of the Predicasts study.[88]

The court relied heavily on the Nimmer treatise, describing value of use as being based "on the most transparent of fictions."[89] The court further relied on Nimmer: "Given that Congress deliberately excluded the recovery of statutory damages for unregistered copyrights under the current Act, the current statutory scheme suggests that Congress, in order to foster registration, chose that the penalty for failure to register is the loss of any recovery in situations such as *Deltak*."[90]

Despite the court's rejection of value of use, the court welcomed a damage model much more liberal than value of use.[91] TFG admitted that discount sales of the infringing study led to increased sales of other TFG products.[92] The court acknowledged that, if BTA could have shown the same purchasers of the infringing study purchased subsequent TFG products,

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82 *Id.*

83 *Id.* at 402.

84 *Id.*

85 *Id.*

86 *Id.*

87 *Id.*

88 *Id.* at 405.

89 *Id.* (citing Nimmer & Nimmer, *supra* n. 1, at § 14.02[B][1], 14-16, 14-17).

90 *Id.* at 406-07 (citing Nimmer & Nimmer, *supra* n. 1, at § 14.02[B][1], 14-16). The court misinterpreted Nimmer's statements. In fact, Nimmer gives qualified support to *Deltak*.

91 *Id.* at 407.

92 *Id.*

"BTA might well have argued that revenues from such subsequent sales were 'profits' under Section 504(b)"[93]

Several cases have addressed value of use damages, but the plaintiff's actions in each case either fixed the damages at a certain price, or the plaintiff was not able to prove value of use damages within a reasonable degree of certainty. In *Steven Greenberg Photography v. Matt Garrett's of Brockton, Inc.*, [94] the advertising agency of Parsons, Friedmann, Stephan & Rose (PFSR) hired Greenberg for photographic services. PFSR intended to provide these photographs to Matt Garrett's for use on the latter's restaurant menu.[95] The parties contracted at a price of $2,667.00 for the photographs.[96] Greenberg submitted the photographs to PFSR but was never paid.[97] PFSR delivered the photographs to Matt Garrett's, which used the photographs on its menus.[98] Greenberg brought suit against Matt Garrett's for copyright infringement.[99] Providing minimal discussion, the court awarded value of use damages, relying on *Deltak* and *Sid and Marty Krofft*.[100] Since Greenberg had contracted with PFSR for $2,667.00, the court determined this figure best represented what a willing buyer would have paid to a willing seller.[101] Greenberg was awarded this amount as value of use damages against Matt Garrett's.[102]

In *Softel, Inc. v. Dragon Medical and Scientific Communications LTD.*, [103] Dragon hired Softel to develop image retrieval software. Dragon obtained Softel's source code and created its own software that infringed two of Softel's image retrieval routines.[104] Before the infringement, Softel offered to sell Dragon programs similar to the infringing programs at

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93 *Id.*; *see also Rogers v. Koons*, 960 F.2d 301, 313 (2d Cir. 1992) (supporting *Deltak* in dicta).

94 816 F. Supp. 46, 47 (D. Mass. 1992).

95 *Id.*

96 *Id.* at 49.

97 *Id.* at 48.

98 *Id.*

99 *Id.* at 47.

100 *Id.* at 49.

101 *Id.*

102 *Id.*

103 891 F. Supp. 935, 938 (S.D.N.Y. 1995).

104 *Id.* A separate trial was previously held solely on liability; Dragon was held liable for copyright infringement. *See Softel, Inc. v. Dragon Med. & Sci. Commun., Inc.*, 1992 WL 168190 (S.D.N.Y. 1992). The reported case dealt solely with damages.

$3,500.00 each.[105] Dragon refused the contract.[106] The court awarded value of use damages measured by the royalty payments it would have received if Dragon had accepted the contract.[107] Thus, the court awarded actual damages of $7,000.00.[108]

In *Quinn v. City of Detroit*,[109] Quinn was the Supervising Assistant Corporation Counsel for the City of Detroit. Quinn developed a computer program for litigation management entitled LMS.[110] As a crucial fact, Quinn developed this program on his own accord; the city was not seeking to implement a computerized litigation management tool.[111] Quinn installed LMS into the city's network without receiving permission.[112] Once on the city network, Quinn continued to refine and develop LMS.[113] City employees became dependent upon LMS, and the city subsequently asserted full proprietary control of LMS.[114] The city eventually hired a consultant to develop a new program at a cost of $3,500.00.[115] Quinn presented an expert witness to testify that it would cost $125,000.00 to develop a new system like LMS.[116] The court decline to award Quinn value of use damages:

> In the case at bar, the *Deltak* rationale should be rejected especially in the absence of any proofs of savings to the City from using LMS or evidence that the City would have purchased a comparable system. Such an award would be based on sheer speculation.[117]

Thus, the court set forth a narrow rejection of *Deltak* because Quinn failed to provide adequate proof of damages.[118] Quinn presented absolutely no

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105 *Softel*, 891 F. Supp. at 938.

106 *Id.*

107 *Id.* at 941.

108 *Id.*

109 23 F. Supp. 2d 741, 743 (E.D. Mich. 1998).

110 *Id.*

111 *Id.* at 744.

112 *Id.* at 743.

113 *Id.*

114 *Id.* at 743-44.

115 *Id.* at 745.

116 *Id.*

117 *Id.* at 751 (emphasis added).

118 *Id.* The court did note that *Deltak* has been criticized in a dicta statement.

evidence the city would have spent $125,000.00 on such a program.[119] Consequently, the court declined to award Quinn any damages at all.[120]

C. The Second Circuit Embraces Deltak

The Second Circuit recently revisited value of use and painstakingly described the narrow scope of *Business Trends*. In *On Davis v. The Gap, Inc.*, [121] Davis designed eye jewelry (eyewear), similar to eyeglasses. The Gap created an ad which pictured youths wearing Davis's eye jewelry.[122] The Gap ran the ad for two months.[123] At trial, Davis sought to recover a license fee for use of his copyrighted eyewear.[124] The trial court rejected this argument, relying on the *Business Trends* decision.[125] On appeal, the court quickly dispensed with *Business Trends*:

> The sole issue before us [in *Business Trends*] was whether either the expenses saved by the infringer resulting from its decision to infringe rather than purchase or the goodwill the defendant generated by offering the infringing material to its customers at a greatly reduced price can be considered "infringer's profits" recoverable under § 504(b). The decision did not involve the question we now consider—whether the amount the owner failed to collect as a reasonable royalty or license fee could be considered as constituting the owner's actual damages under § 504(a) and (b).[126]

The court set forth two reasons why *Business Trends* does not exclude value of use as proper damages.[127] First, value of use was not properly presented in *Business Trends*, and any comments made about actual damages were

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119 *Id.*

120 *Id.* at 753.

121 246 F.3d 152, 156 (2d Cir. 2001). This case has received negative treatment, but these cases all regard fair use provisions, not value of use damages. *See Andreas v. Volkswagen of Am., Inc.*, 210 F. Supp. 2d 1078 (N.D. Iowa 2002); *Video Pipeline, Inc. v. Buena Vista Home Ent., Inc.*, 192 F. Supp. 2d 321 (D.N.J. 2002); *Mattel, Inc. v. Pitt*, 229 F. Supp. 2d 315 (S.D.N.Y. 2002).

122 *On Davis*, 246 F.3d at 157.

123 *Id.*

124 *Id.* at 161.

125 *Id.*

126 *Id.* at 163. The court also noted that, before and after *Business Trends*, Second Circuit cases have awarded value of use damages or declared them to be appropriate. *Id.* at 161-62; *see Rogers v. Koons*, 960 F.2d 301, 310-13 (2d Cir. 1992); *Abeshouse v. Ultragraphics, Inc.*, 754 F.2d 467, 470-72 (2d Cir. 1985); *Szekely v. Eagle Lion Films, Inc.*, 242 F.2d 266, 268-69 (2d Cir. 1957).

127 *On Davis*, 246 F.3d at 163.

dicta.[128] Second, *Business Trends* did not lay down an absolute rule; it was "a ruling that was heavily influenced by the particular facts of that case."[129] Furthermore, the court clearly stated that *Business Trends* did not reject value of use as a matter of law.[130] Rather, value of use damages are permissible as actual damages so long as the award is not based on undue speculation.[131]

The court went on to reject the provisions of Nimmer which were relied upon by the *Business Trends* court.[132] First, Nimmer's assertion that courts have rejected a reasonable royalty standard is overly broad.[133] Nimmer cites only one case to support this statement.[134] Additionally, Nimmer cites other cases that are acknowledged by Nimmer as not on point.[135] Second, Nimmer's argument that statutory damages would displace speculation in awarding value of use damages was based upon the 1909 Act, where statutory damages were available for copyright owners who registered their copyrights after the infringement.[136] The current limitation on the availability of statutory damages under 17 U.S.C. § 412 defeats Nimmer's rationale.[137] Third, Nimmer's argument that estimating what the infringer might have paid to the owner had the parties negotiated rests on "the most transparent of fictions" is misplaced.[138] In determining what the infringer might have paid, the analysis of whether the infringer actually would have negotiated with the owner is irrelevant.[139] The court clarified the rationale for examining what the infringer might have paid to the owner:

> The hypothesis of a negotiation between a willing buyer and a willing seller simply seeks to determine the fair market value of a valuable right that the infringer has illegally taken from the owner. The usefulness of

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128 *Id.*

129 *Id.*

130 *Id.* These clarifications of *Business Trends* seem more accurately described as retractions than explanations. The language in *Business Trends* tersely criticized value of use damages. Here, the Second Circuit is softening its originally aggressive stance against value of use damages.

131 *Id.*

132 *Id.* at 170-71.

133 *Id.* at 171.

134 *Id.*

135 *Id.* at 171 n. 6.

136 *Id.* at 171.

137 *Id.*

138 *Id.*

139 *Id.* at 171-72.

> the test does not depend on whether the copyright infringer was in fact himself willing to negotiate for a license. The honest purchaser is hypothesized solely as a tool for determining the fair market value of what was illegally taken.[140]

The court held that 17 U.S.C. § 504(b) "permits a copyright owner to recover actual damages, in appropriate circumstances,[141] for the fair market value of a license covering the defendant's infringing use."[142] In reaching this decision, the court concluded value of use damages are actual damages:

> If a copier of a protected work, instead of obtaining permission and paying the fee, proceeds without permission and without compensating the owner, it seems entirely reasonable to conclude that the owner has suffered damages to the extent of the infringer's taking without paying what the owner was legally entitled to exact a fee for. We can see no reason why, as an abstract matter, the statutory term "actual damages" should not cover the owner's failure to obtain the market value of the fee the owner was entitled to charge for such use.[143]

Furthermore, the court provided a policy rationale behind value of use damages:

> In our view, as between leaving the victim of the illegal taking with nothing, and charging the illegal taker with the reasonable cost of what he took, the latter, at least in some circumstances, is the preferable solution.[144]

The court held Davis presented sufficient evidence to be entitled to this remedy.[145] Only three matters of evidence were mentioned in the case. On one occasion, Davis received $50.00 from *Vibe* magazine to publish a photograph of a musician wearing Davis's eyewear.[146] Also, Davis had earned $10,000.00 in sales of his eyewear.[147] Finally, numerous instances

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140 *Id.* at 172.

141 This case involved honest infringement in that the Gap's ad featured a person wearing Davis' eyewear by accident. The court offers a slight limitation on its ruling, stating, "even if the larcenous intentions of the Deltak infringer furnished a valid reason to decline to award damages *in that case* for the fair market value of what the infringer took for free, that circumstance, as noted above, would not apply to all copyright infringement cases." *Id.* (emphasis added). The court states value of use is definitely available in honest infringement cases, but the court balks at stating value of use is always available. The court never passes an opinion on whether or not the fact that the owner and infringer are competitors should preclude value of use damages.

142 *Id.*

143 *Id.* at 165; *see also id.* at 165-66 (providing five hypothetical situations for clarification).

144 *Id.* at 166.

145 *Id.* at 172.

146 *Id.* at 157.

147 *Id.*

existed of music stars wearing Davis's eyewear in music publication photographs.[148] The court found this evidence sufficient to establish a fair market value of $50.00 for use of the eyewear in photographs, and this amount could be higher if the Gap's circulation was proven to be greater than *Vibe*'s circulation.[149] The court, however, remanded the case on the issue of actual damages under Section 504(b), providing neither an amount of damages nor a calculation of damages.[150]

The Second Circuit's adaptation of the willing buyer-willing seller test represents movement to true value of use damages. In this case, the willing buyer-willing seller test was used as a benchmark for estimating value of use damages. But the Second Circuit was still tailoring value of use damages upon the owner's possession. True value of use damages come from the infringer's use. Rather than examining the fair market value of what the owner possessed, value of use should be analyzed by the value generated from the infringement. Recent developments in value of use damages have endorsed this transition.

D. The Current Status of Value of Use Damages

Last year the Seventh Circuit reaffirmed as well as refined its position regarding value of use damages. In *McRoberts Software, Inc. v. Media 100, Inc.*,[151] McRoberts Software, Inc. (MSI) developed a program for character generation called Comet. Media 100 entered into a licensing agreement with MSI for use of Comet.[152] At the time, Comet could only run on Macintosh computers.[153] Media 100 sensed the need to enter the Windows market and hired Vanteon to translate Comet to Windows code.[154] Media 100 paid Vanteon $3.2 million and never sought MSI's permission for the transaction.[155] Media 100 labeled this new product Finish and immediately began selling Finish.[156] The trial court awarded MSI actual

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148 *Id.* at 161.

149 *Id.*

150 *Id.* at 176.

151 329 F.3d 557, 561 (7th Cir. 2003).

152 *Id.*

153 *Id.* at 562.

154 *Id.*

155 *Id.*

156 *Id.*

damages of $1.2 million plus Media 100's profits of $900,000.00.[157] Media 100 challenged this reward as duplicative.[158]

The court held, "[a]ctual damages are usually determined by the loss in the fair market value of the copyright, measured by the profits lost due to the infringement or by the value of the use of the copyrighted work to the infringer."[159] The court provided further guidance on the requisite accuracy of value of use damages: "It is not improper for a jury to consider either a hypothetical lost license fee **or** the value of the infringing use to the infringer to determine actual damages, provided the amount is not based on 'undue speculation.'"[160] In this case, MSI presented several ways to calculate its actual damages, including:

> (1) The value of a software development fee to covert Comet to Windows (equivalent to the value of the translation project undertaken by Vanteon);
>
> (2) The value of the software license fees Media 100 paid to Inscriber, the third party supplier of Windows-compatible character generation software whose product Media 100 eventually incorporated into its Finish product line to replace the translated Comet;
>
> (3) The ratio of license fees paid to MSI for sales of Comet incorporated into Media 100 (Macintosh) products compared to the projected sales of a Windows-compatible version of Comet incorporated into Finish (Windows) products;
>
> (4) The ratio of software development fees to software license fees based on prior agreements between MSI and Media 100; or
>
> (5) The terms of a hypothetical license fee between MSI and Media 100 for a Windows-compatible version of Comet used on the relative size of the Macintosh market as compared to the Windows market for such products.[161]

Media 100 attacked these theories of recovery on two grounds.[162] First, Media 100 claimed it would not have hired MSI to translate Comet because MSI had neither the resources nor the capability to handle such a project.[163] The court held Media 100's argument entirely missed the point.[164] Media 100 infringed MSI's copyright in part by having a derivative work

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157 *Id.* at 565.

158 *Id.* at 565-66.

159 *Id.* at 566.

160 *Id.* (emphasis added).

161 *Id.* at 566-67.

162 *Id.* at 567.

163 *Id.*

164 *Id.*

created.[165] MSI was entitled to damages for this infringement, and "Media 100's estimation of MSI's interest or ability in the translation project is irrelevant."[166] Second, Media 100 attacked MSI's theories of recovery because MSI could not prove the actual value of use.[167] The court held MSI had no such duty; "[MSI] was required only to provide sufficient evidence of the value so that the jury did not have to resort to undue speculation in estimating actual damages."[168] MSI presented the following evidence of value of use to Media 100:

> (1) Media 100's licensing and software development agreements with Inscriber ($1.43 million);
>
> (2) The value of Media 100's contract with Vanteon to translate MSI. Macintosh software to Windows ($3.2 million);
>
> (3) Media 100's actual and projected sales of its Finish product line incorporating Windows character generation software ($10—$65 million); and
>
> (4) A hypothetical license fee based on the comparative size of the Macintosh and Windows market for video editing products ($9.75—$15.6 million).[169]

The court held this evidence MSI presented combined with Media 100's past dealings with MSI provided the jury with sufficient evidence to reach the actual damage award of $1.2 million.[170]

Next, Media 100 argued the award of Media 100's profits was duplicative of the actual damage award.[171] The court stated the policy for awarding defendant's profits: "Without this rule, Media 100 could infringe MSI's copyright without the risk of losing more than it would have had to pay not to infringe and with the benefit of keeping whatever profits it made by infringing."[172] The jury was properly instructed not to include in the profits award any amount included in the actual damages award.[173] With proper jury instructions, the court must assume the jury followed them.[174]

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165 *Id.*

166 *Id.*

167 *Id.*

168 *Id.*

169 *Id.*

170 *Id.*

171 *Id.* at 568.

172 *Id.* at 568-69.

173 *Id.* at 569.

174 *Id.*

Therefore, the award of Media 100's profits was not duplicative of the award of MSI's actual damages.[175]

This case features two crucial points. First, the Seventh Circuit has moved its analysis to true value of use damages by holding the jury could consider the hypothetical license fee **or** the value of the infringement. Second, this case illustrates the necessity for awarding value of use damages through the limitations of statutory damages. Until *McRoberts*, value of use damages were often analyzed by the courts only in situations where the owner was not qualified to seek statutory damages. In this case, MSI was entitled to recover statutory damages, and Media 100's infringement was willful.[176] However, since copyright owners are only entitled to one statutory award per article infringed, MSI could at best have recovered $300,000.00. No matter which calculation is approved, damages in this case consisted of millions of dollars. In the software industry, a damage award of $150,000.00 will often prove a paltry sum compared to the value gained from infringement.

A month after the *McRoberts* decision, the Seventh Circuit furthered its transition to true value of use damages. In *Bucklew v. Hawkins, Ash, Baptie & Co.*, [177] Bucklew developed and copyrighted software to assist in grant applications to the federal department of Housing and Urban Development (HUD). Bucklew's software, when used with a spreadsheet application, performed the necessary arithmetic functions and displayed the necessary information in tables.[178] Bucklew, however, did not claim copyright in any of the features performing operations.[179] Instead, he only sought copyright protection for the decisions of font, color, and placement of text.[180] This point was crucial when the court reviewed the damage award.[181]

The jury award in favor of Bucklew consisted of standard copyright damages for Bucklew's lost profits and HAB's profits.[182] Moreover, the jury also awarded damages for the time savings HAB obtained from infringement and HAB's profits on separate products (the jury determined the infringement allowed HAB to offer "one-stop shopping" by offering a

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175 *Id.*

176 *Id.* at 571-72.

177 329 F.3d 923, 925-26 (7th Cir. 2003).

178 *Id.*

179 *Id.* at 926.

180 *Id.*

181 *Id.* at 932.

182 *Id.* at 931.

complete line of HUD financial software).[183] The court approved the award of time savings damages as nonduplicative of the other awards:

> The item of damages for time savings is not duplicative of the other damages that were awarded. . . . The savings are in the time that HAB takes to service it customers . . . and do not show up in the profits that HAB makes from the sale of the infringing products and so the loss that Bucklew suffered from the infringement.[184]

Because Bucklew only copyrighted the formatting display choices of the software, however, the court held these damages improper.[185] Bucklew's formatting choices in no way reduced the amount of time HAB needed to process data.[186] Because only the formatting choices were copyrighted, the court deemed using spreadsheet programs with DSUM functions to be ideas.[187] Thus, HAB's use of the software to enhance efficiency represented value of use of ideas, not value of use of a copyright.[188] The court also welcomed the damages from related products:

> Remember that the purpose of allowing suit for the infringer's lost profits is to make infringement worthless to the infringer. This will sometimes require tracing those profits into another product, as where it is bundled with the infringing product.[189]

Bucklew, however, offered only speculative proof of these damages.[190]

E. Rethinking the Phrase "Value of Use"

Is "value of use" the proper phrase for the damages these courts were considering? The phrase "value of use" suggests that copyright is a right based on possession, and infringement based on use creates an unusual scenario. Such a suggestion is incorrect. The right of reproduction is most closely associated with a right of possession.[191] The other rights vested in a copyright owner—reproduction, distribution, creation of derivative works,

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183 *Id.*

184 *Id.* at 932.

185 *Id.*

186 *Id.*

187 *Id.* at 932-33.

188 *Id.* at 933.

189 *Id.*

190 *Id.*

191 Craig Joyce, Marshall Leaffer, Peter Jaszi & Tyler Ochoa, *Copyright Law* 490 (6th ed., M. Bender & Co. 2003); *see Walt Disney Prods. v. Filmation Assoc.*, 628 F. Supp. 871 (C.D. Cal. 1986).

performance, and display—are more closely defined as rights to use the copyrighted work.[192] Usually, the copyright owner must exert some action upon the work to derive any value from the work. The author must publish and sell numerous copies of a book; the painter must sell paintings. The mere existence of the work, standing by itself, creates little, if any, value. The work must be used or sold to generate value. Stated differently, the right of reproduction alone typically carries little value. The right of reproduction must be exercised along with the "use" rights to obtain economic benefit. This is evidenced by infringers' actions. Infringers rarely only reproduce the work without also distributing the work.[193] The infringer witnesses no financial gains from just copying the work.[194] Copyright protection and use have gone hand-in-hand since the advent of copyright law.

In the cases prior to *McRoberts* and *Bucklew*, the courts were using the phrase "value of use" to focus on the amount the infringer should have paid to the owner for use of the copyright. In these situations, the infringers' profits from sales to consumers were either zero or incalculable. Thus, the courts moved to the hypothetical transactions that should have occurred between the owner and infringer to properly assess copyright infringement damages. The courts properly shifted their analyses to transactions directly relating to the immediate legal conflict. These courts, however, painted themselves into a corner by using the phrase "value of use." Furthermore, in *McRoberts* and *Bucklew*, the Seventh Circuit moved toward an analysis of infringer gains other than direct sales to consumers. But the court kept the phrase "value of use." These were situations where the infringer created (or wrongfully obtained) an infringing software for its own business use. In other words, the infringer decided to forego transactions both with the owner and with direct sales of the work to consumers. The court here was using the phrase "value of use" to analyze completely different transactions than the transactions involved in *Deltak*.

As demonstrated by the case law, the courts are getting closer at properly assessing damages for software infringement. The phrase "value of use" is at best clumsy, and it has played a significant role in preventing courts from perfecting their damage models.[195] The obvious first step is that courts should adopt new terminology in analyzing software infringement

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192 Joyce et al., *supra* n. 191, at 490.

193 *Id.* at 497.

194 *Id.*

195 The phrase "value of use" is not the first time the courts have poorly selected the word "use." The Supreme Court's infamous use/explanation distinction created more questions than it answered. *See Baker v. Selden*, 101 U.S. 99, 101 (1880); Joyce et al., *supra* n. 191, at 119.

cases. This is best accomplished by taking a closer examination of copyright. Upon such examination, it is apparent that three distinct transactions are involved with copyrighted works.

III. TRANSACTIONS INVOLVED WITH COPYRIGHTED WORKS

To understand the different transactions involved with copyrighted works, it is important to address two other common features that copyrighted works share. First, the author intends for some use to be made of the work. For example, the best selling author wants readers to read his books. His ultimate goal may be to make a lot of money, but he accomplishes this goal by readers purchasing the right to read the book. Second, the author intends to convey a benefit upon the user of the work. For a fiction book, the benefit is entertainment. For a "how to" book, the benefit is betterment of one's life and/or business. The faster the intended use can yield the intended benefit to the user, the higher the value of the work to the user. Any determination of the value of a copyrighted work should emphasize the relationships between intended use and value derived by the user. To clarify this point it is necessary to analyze the different transactions involved in copyrighted works. Copyrighted works involve three transactions: (1) internal transactions, (2) direct external transactions, and (3) indirect external transactions.

A. Internal Transactions

Internal transactions consist of the actual intended use of the copyrighted work. For example, the internal transaction of a book is reading the book. The internal transaction for a painting is to look at the painting. With typical[196] copyrighted works, the value of internal transactions (V_{IT}) is low. This is due to three factors. First, copyright only protects one particular expression.[197] There is no protection for the idea. V_{IT} is measured by the value of the intended use of that one particular expression. Second, a work of authorship is most often a stand-alone work. Books, paintings, and sculptures are created for their own intrinsic value; they do not operate on another good to make the other good more valuable. Third, when a work of

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[196] Ironically, after criticizing the courts for selecting a clumsy phrase, this article must select a clumsy word. Although software is clearly protected by copyright, software is significantly different from other works more traditionally associated with copyright. This article will refer to these traditional copyrighted works as typical works. Joyce et al., *supra* n. 191, at 166-67.

[197] *See Baker*, 101 U.S. 99.

authorship is not a stand alone work, it demands the creation of a derivative work. A movie script is written to be read and for a movie to be created. A song is written to be performed. The movie *Titanic* is the highest grossing film ever.[198] Like all other movies, it evolved from a script. However, this script would be worthless without the major investment of making the movie from the script.

V_{IT} is assessed by factoring the value of the benefit received from using the work and the distance from use to realization of that value. V_{IT} increases as the value of the benefit received increases. A book that teaches the reader how to run a successful business conveys more value than an entertaining novel. The more significant relationship to analyze, however, is the time between use of the work and realization of conveyed value. The shorter the distance between use and realized value, the higher the V_{IT}. Consider Herb Cohen's recent book, *Negotiate This! By Caring, But Not T-H-A-T Much*.[199] In this book, Mr. Cohen explains strategies for effective negotiation.[200] The intended use is for the consumer to read the book. The intended benefit is high; the reader will secure better deals through better negotiating skills. V_{IT}, however, is still somewhat low. The reader must study the book, then commit a great deal of time mastering the techniques, and then implement these techniques in actual negotiations. The distance from the intended use to the intended benefit is long.

The value of software derives from the software's functionality rather than its unique expression.[201] Software is thus opposite from typical copyrighted works in that V_{IT} of software is high. Software receives the same limited copyright protection of one particular expression as typical copyrighted works. Software, like some other typical copyrighted works, is not a stand alone good. The difference lies in that software does not require the creation of a derivative work. With software, the derivative works are marketing, production, and other aspects of a business that have already been created. Software is designed to enhance these existing functions and improve their value. Software is therefore designed for V_{IT} to be an extremely valuable component. The user derives significant value from the actual function the software performs. In other words, the distance between intended use and intended benefit is short. Consider a software that could predict, with 100% accuracy, the lowest price a car dealer was willing to accept on any given car. All the user has to do is enter some key data and the

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198 *WorldwideBoxoffice,* http://www.worldwideboxoffice.com (accessed Apr. 13, 2005).

199 Herb Cohen, *Negotiate This! By Caring, But Not T-H-A-T Much* (Warner Books 2004).

200 *See id.*

201 Raymond T. Nimmer & Patricia Ann Krauthaus, *Software Copyright Sliding Scales and Abstracted Expression*, 32 Hous. L. Rev. 317, 330-31 (1995).

program generates the number. Here, V_{IT} is incredibly high. The intended use is entering data into the program. The intended benefit is monetary savings by striking the best possible deal. Most of all, the distance between use and realization of the intended benefit is extremely short. The user can purchase the software, use it, and buy the car all in one day. The user understands little or nothing about the art of negotiation, but he gets the best price (or close to it) that anyone can get. The user has realized the intended benefit in a fraction of the time it would have taken to study Cohen's teachings.

B. Direct External Transactions

Direct external transactions consist of transactions between parties where the copyrighted work or the infringing work is the cornerstone of the transaction. Direct external transactions consist of: (1) sale or license of the copyrighted work from the owner to the licensee; or (2) a sale by the infringer to consumers procured by the infringer's possession of the infringing work. Three possible parties may participate in direct external transactions: the owner, the licensee or infringer, and consumers. Direct external transactions come in three forms: (1) the owner's sales to consumers that should have occurred absent the infringement; (2) the transaction that should have occurred between the infringer and the owner for the infringer to obtain some or all of the rights in the copyrighted work; and (3) the infringer's sales of the infringing work to consumers. To date, copyright damages have been sculpted from direct external transactions.[202] The owner's actual damages are determined by analyzing (1) and (2). The infringer's profits are determined by analyzing (3).

The primary value from typical copyrighted works is the value of direct external transactions (V_{DET}). V_{DET} is approximately equivalent to the sum of each end user's V_{IT}. If an infringer wrongfully copies a book and reads it, he only derives the unsubstantial amount of V_{IT} from reading the book. If the same infringer, however, makes and sells one thousand copies of the same book, the infringer derives significant benefit from V_{DET}, i.e. sales to third parties.[203] Because infringers of typical copyrighted works commit to V_{DET} to maximize value of infringement, copyright law has up until now focused on V_{DET} to calculate damages in copyright infringement cases.

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[202] *See supra* § I.

[203] This concept was recently demonstrated by P2P file sharing systems. Each individual use (V_{IT}) comprised a nominal amount of infringement. But the V_{DET} was extremely high, to the point that the Recording Industry Association of America (RIAA) began suing individuals.

With software, V_{DET} applies the same as with typical copyrighted works in some situations. The infringer can treat the software as a resale good, make numerous copies, and sell for a profit. However, the infringer is not forced to take this action to maximize value from infringement. More often than not, software's principal value lies in the value of internal transactions and value of indirect external transactions. The infringer can maximize value of infringement by foregoing any sales of the infringing software to consumers. The only direct external transaction at issue is the transaction that should have occurred between the infringer and the owner for the infringer to legally obtain rights to the software.

C. Indirect External Transactions

Indirect external transactions consist of transactions between parties where the copyrighted work or the infringing work is not the cornerstone of the transaction. However, the copyrighted work or the infringing work creates additional value in the transaction for the owner or the infringer. With software, indirect external transactions are the most crucial component in terms of value (V_{IET}). Software does not create a new "thing." Rather, software provides capabilities for improving already existing functions. Word processing software does not create the ability to generate documents. Before word processing software was available, people used typewriters or hand writing tools to generate documents. Word processing software facilitates generating documents with greater ease and professional appearance. As a result, it is demonstrated that, with software, V_{IT} and V_{IET} have a direct relationship. An increase in V_{IT} yields a similar increase in V_{IET}. The only way a work can have a significant effect on indirectly related transactions is to carry a high value of internal transactions itself. As discussed above, the most crucial element in assessing V_{IT} is the distance from use to realization of intended benefit. This distance impacts the strength of the relationship between V_{IT} and V_{IET}. As the distance from intended use to intended benefit increases, it yields a net increase in V_{IT}, which in turn yields a net increase in V_{IET}.

Additionally, V_{IT} will yield a net increase in V_{IET} if the copyrighted work is applied to a series of functions. This concept is best illustrated through the basic infrastructure of business. Any business consists of a series of connected functions: research & development, production, marketing, sales, and distribution.[204] An increase in value of one function

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[204] *See* Raymond T. Nimmer, *The Law of Computer Technology: Rights, Licenses, Liabilities* app. D, § 2.3 (3d ed., West 2004) (intellectual property assets are but one component working with these functions to generate market power). While other

will ultimately increase net profit, but it will also improve another function. Consider a shoe company that, for every dollar of sales, it spent $.05 trying to produce and sell unsuccessful shoes (shoes consumers did not want to purchase). Suppose the company installs an infringing software that somehow improves research and development where the company makes more successful shoes and less unsuccessful shoes. As a result, the company now only loses $.03 for unsuccessful shoes on every dollar of sales. Put another way, the software increases the V_{IT} of research and development. Even if total sales revenue remains constant, the company will witness monetary savings in the amount of $.02 for every dollar of sales. Because research and development is only one of several functions in business, this increase in V_{IT} will generate even greater financial gain through increase in V_{IET}. The software will have no direct impact on sales. It is unlikely consumers will purchase shoes because the company has some incredible research and development software. Nonetheless, the software will have an indirect effect on the sales transactions. Marketing and sales teams will spend more time promoting successful shoes and less time promoting unsuccessful shoes. The additional time committed to promoting successful shoes will create new sales that would not have occurred absent the extra time committed. Revenue will increase, and the company will witness financial gains through increased sales that can easily exceed the financial savings from using the infringing software.

Provided that the copyrighted work: (a) has a short distance from use to intended benefit, and (b) operates on an existing function or series of existing functions, the direct relationship between V_{IT} and V_{IET} strengthens. At some point, this strength transforms the relationship from a direct relationship to a cause-effect relationship. A high V_{IT} will cause an increase in V_{IET}. Once this cause-effect relationship is in place, the infringer maximizes value of infringement by committing wholly to V_{IT} and V_{IET}. There is no need for the infringer to exploit V_{DET}. When the infringer commits wholly to value of internal transactions and value of indirect external transactions, any application of damages based on direct external transactions will prove insufficient. The damage model will have to account for V_{IT} and V_{IET} in order to prevent the infringer from witnessing gains from the infringement even after paying full damages to the owner.

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intellectual property assets complement these functions, software directly improves the efficiency of some or all of these functions.

IV. ECONOMIC JUSTIFICATIONS FOR AWARDING VALUE OF INTERNAL TRANSACTIONS AND VALUE OF INDIRECT EXTERNAL TRANSACTIONS

Much scholarly work addresses the value of intellectual property assets.[205] This information is helpful in determining licensing fees, whether or not to pursue litigation, and accounting measures. The focus of this article is to shift the analysis to the value of infringement. What difference does intellectual property valuation make if the infringer has stronger incentives to infringe then to license?[206] American intellectual property law has been developed by promoting the short-term interests of intellectual property owners to provide long-term benefits for the public. As Justice Reed observed:

> The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in "Science and useful Arts." Sacrificial days devoted to such creative activities deserve rewards commensurate with the services rendered.[207]

Hence, while American copyright owners are granted the right to profit from their works, the ultimate goal is to benefit the public.[208] International copyright law, on the other hand, looks at fundamental rights for copyright protection.[209] The intellectual property owner deserves protection because the work is a part of him.[210] The benefit of the owner, not the public, takes prominence in international intellectual property law.[211] Noting these differences in principles of intellectual property law, it would be a misnomer to view infringement under American intellectual property law as some form of a moral misdeed. Rather, it is better to view infringement as a business decision.

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205 *See e.g.* Gordon V. Smith & Russell L. Parr, *Valuation of Intellectual Property and Intangible Assets* (3d ed., John Wiley & Sons, Inc. 2000); Ted Hagelin, *A New Method to Value Intellectual Property*, 30 AIPLA Q.J. 353 (2002); Judith L. Church, *Structuring Deals Involving Intellectual Property Assets*, 706 PLI/PAT 199 (2002).

206 *See generally* Dennis S. Corgill, *Measuring the Gains of Trademark Infringement*, 65 Fordham L. Rev. 1909 (1997).

207 *Mazer v. Stein*, 347 U.S. 201, 219 (1954).

208 *Id.*

209 Gillian Davies, *Copyright and Public Interest* 13 (2d ed., Sweet & Maxwell 2002).

210 *Id.* at 14.

211 *See id.*

Infringers usually do not infringe merely for the sake of infringing. The infringer seeks to appropriate value that the intellectual property owner has created.[212] This appropriation may be accomplished either through infringement or through licensing. Infringers invoke a cost-benefit calculus to determine whether to infringe or license. If the value of infringement (V_I) is high, infringement will better serve his needs. If the value of licensing (V_L) is high, licensing will better serve his interests. This calculus is displayed by a simple equation:

$V_I > V_L \rightarrow$ Infringement

$V_L > V_I \rightarrow$ Licensing

Put another way: $V_I - V_L > 0 \rightarrow$ incentive to infringe. This simple equation illustrates the deterrent effect goal of copyright damages. "By preventing infringers from obtaining any net profit it makes any would-be infringer negotiate directly with the owner of a copyright that he wants to use, rather than bypass the market by stealing the copyright and forcing the owner to seek compensation from the courts for his loss."[213] Stated differently, the objective is to make V_L always exceed V_I. If the infringer can, even after suffering a full legal defeat, witness greater returns from infringement than licensing, there is no incentive for the infringer to not infringe.[214] Worse, such a scenario will create a "tacit invitation" for infringement.[215] Just as inventors need incentives to create intellectual property, infringers need incentives to license rather than infringe.[216]

A. Intangible Considerations

Before discussing the economics of value of licensing and value of infringement, it is necessary to discuss intangible benefits and risks that factor into the decision of whether to license or to infringe. The first major intangible benefit is that infringement permits the infringer to take a risk averse position.[217] Every licensing agreement requires a financial commitment by the licensee before the licensee can make use of the licensed good. This commitment may come in the form of an upfront fee, a

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212 William M. Landes & Richard A. Posner, *The Economic Structure of Intellectual Property Law* 60 (Harvard U. Press 2003).

213 Coleman, *supra* n. 7, at 115-16.

214 *See generally id.* at 110.

215 *Id.*

216 *See* Blair & Cotter, *supra* n. 12, at 1618-20.

217 *See id.* at 1621-22.

percentage of sales to be paid later, or both. By choosing to infringe, the infringer is able to delay this commitment until after the infringer has tested the market. The infringer can take funds that should have been committed to securing the license and commit them to marketing and sales. Furthermore, the infringer reaps the benefits of maximizing cash inflows while minimizing cash outflows.

The major risk involved with infringement is the probability of the owner filing a successful infringement action against the infringer. This probability is actually divided into numerous smaller probabilities, most notably: (1) the probability the infringement will be detected; (2) the probability the owner will file a lawsuit; (3) the probability the infringer will be found liable for infringement; (4) the probability that damages will be awarded; and (5) the amount of damages that will likely be awarded. Even these "sub-probabilities" must be evaluated by analyzing numerous factors. Can the owner afford to file suit? Where can the suit be filed, and what are the parties' respective reputations in that jurisdiction? Can the owner afford an intellectual property litigation specialist, or is a commercial litigator taking the case on a contingency fee? All the factors are so numerous it is impossible to generate an exhaustive list. Finally, the infringer must analyze the potential reputational harm he will suffer because of the infringement. Moreover, by infringing now, the infringer may weaken his bargaining position when trying to negotiate licenses with others.

The ultimate purpose of this article is to present an argument for awarding value of internal transactions and value of indirect external transactions in software infringement cases. This goal is accomplished by analyzing the monetary returns involved in licensing as well as in infringement. Consequently, this article will at times discuss intangible benefits and risks from infringement in the following sections. These factors, however, will be removed from the equations for greater clarity of material that is complex enough without factoring in intangible considerations.

B. The Economics of Licensing

Every licensing agreement will yield an economic impact on both the licensor and the licensee.[218] When faced with the decision to infringe or license, the potential licensee must assess value of licensing in terms of this economic impact. The value of licensing may be determined by asking: what profits can be realized by licensing the intellectual property? The answer to this question differs for the separate types of licensing. Licensing

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[218] Smith & Parr, *supra* n. 205, at 344.

must be divided into two subcategories: (1) licensing for direct external transactions; and (2) licensing for internal transactions and indirect external transactions.

1. Licensing for Direct External Transactions

Licensing for direct external transactions occurs when the licensee seeks to resell the licensed good. Under this model, value of licensing (V_L) is the profits (π_L) that can be earned from reselling the good. Semantics perhaps, but it is necessary to state that π_L is calculated by net revenues from licensing (R_{NL}) less acquisition costs through licensing (C_L).[219] In this form of licensing, value comes from resell, not from internal transactions. Thus, V_{IT} and V_{IET} are not considered here. Second, the licensee is free to seek profits from other goods and services the licensee can procure by advertising the new technology. These profits are also direct external transactions because the value of these transactions was procured through possession of the licensed good. Such profits are designated π_R (profits from related external transactions). Under the normal situation where the infringer's profits can be calculated, the Copyright Act mandates the owner be awarded C_L and then whatever amount of π_L that was not duplicative of C_L.[220] In other words, the proper damages are the net value of total direct external transactions. Thus, the equation is modified: $V_L = \pi_L + \pi_R = V_{DET}$.[221]

In situations like *Deltak*, R_{NL} is either zero or non-calculable. Because $R_{NL} - C_L$ yields π_L, there is no way to ascertain π_L. In response, the Seventh Circuit was awarding the fairest estimate of a hypothetical C_L as actual damages.[222] To understand why these damages are appropriate, it is necessary to understand the possible profit range if the licensee changes positions to an infringer. With licensing for direct external transactions, the licensee takes on the role of a retailer and the owner takes on the role of manufacturer. The licensee charges consumers a higher price than the licensing fee, thereby creating profits. If the licensee decides to instead become an infringer, he can charge the same price and drive up profits. In a perfect economic model, the following truth will exist:

$Sp > Ap > Pp$,

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219 *See id.* (explaining that value derived from licensing is cash flow produced from licensing less the cost of the license).

220 17 U.S.C. § 504(b).

221 Total direct external transactions may involve additional transactions other than those between licensor and licensee and licensee and consumers. Depending upon the terms of the license, there may be assignments and sublicenses to consider.

222 See Coleman, *supra* n. 7, at 105.

where Sp is the selling price; the price at which the licensee intends to sell the product to end consumers. Ap is the acquisition price; the cost of acquiring the license from the owner (equivalent to C_L). Pp is the production price; the cost of actually making the product. It is important to note this truth will not always exist in the real world. Consumer demand may not justify a high enough price for the parties to create the license.[223] Assuming the truth exists, the licensor witnesses profits of Ap – Pp, the licensee witnesses profits of Sp – Ap, and both parties enjoy the economic benefits of the license. However, the potential licensee can realize larger profits by infringing. Once the party becomes an infringer, the infringer can witness profits of Sp – Pp. Alternatively, the infringer can establish a price of Sp′, which lies somewhere between Sp and Ap. In either case, the infringer is able to generate market inequalities and realize higher profits than if he enters into the licensing agreement with the owner.

In response to the infringer's ability to generate market inequalities, copyright law permits the owner to recover the infringer's profits. Once the owner recoups the licensee-turned-infringer's profits, the owner has retained the full V_L from the defendant, and the licensee gains nothing from infringement. If the award of defendant's profits was based on a fair market value assessment of profits, the infringer could always achieve profits in excess of the damage award. The infringer could always beat the fair market profit level by generating a market inequality. Thus, the infringer would be capable of earning profits in excess of what the market should allow. Because the award of defendant's profits is sensitive to the infringer's ability to generate market inequalities, incentives to infringe are removed. A flexible award of defendant's profits is insufficient to deter infringement when the infringer's primary value stems from use V_{IT} and V_{IET} rather than V_{DET}.

2. Licensing for Internal Transactions and Indirect External Transactions

In this situation, as the title indicates, the licensor confers two benefits upon the licensee. First, the licensee obtains the value of internal transactions. Second, the software may increase the value of indirect external transactions. With this type of licensing, value of internal transactions and value of indirect external transactions must exceed the cost of licensing.[224] Otherwise, the licensee has no incentives to license.[225] If the

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223 Lack of consumer demand is but one of many risks the parties to a potential license must consider. *See* Smith & Parr, *supra* n. 205, at 344-49.

224 *See id.* at 336.

cost of the licensing fee equals all gains the licensee can achieve from the software, he makes no profit.[226] This would be equivalent to a retail store selling all its goods at cost. For this type of licensing, value of licensing (V_L) is represented by the equation:

$$V_L = V_{IT} + V_{IET} - C_L$$

Here, V_{IT} represents the value of internal transactions, C_L represents the cost of obtaining the license, and V_{IET} represents the value of indirect external transactions.

In the normal transaction, the owner selects the price (C_L) at which he is willing to yield to the licensee V_{IT} and V_{IET} that exceed C_L. Assume a software developer (Developer) creates new client information database software. Further assume a dentist is interested in using the software to improve networking and client contacts. The dentist has no V_{DET} in mind; he or she has no intention of copying and reselling the software. He or she is only interested in providing dental services. However, the dentist has great V_{IT} and V_{IET} in mind and seeks to better organize his client information to boost networking and ultimately increase sales. Once Developer offers the software for sale at a chosen price, Developer has established the market value of the book. Stated differently, Developer has chosen the price at which he will provide V_{IT} and V_{IET} to the dentist. As discussed above, this price must be lower than the combined sum of V_{IT} and V_{IET}, or otherwise the dentist will have no interest in the transaction. This is why a license fee will always represent a figure below the combined sum of the licensee's V_{IT} and V_{IET}.

When infringement occurs before the owner selects this price, the infringer realizes V_{IT} and V_{IET} before the owner can decide the price at which he will provide V_{IT} and V_{IET} to the infringer. In other words, Developer has not yet selected the price at which he will permit the dentist to increase profits by using the software. Taking this concept one step further, the dentist has utilized rights in the copyright bundle before Developer has selected the proper fee at which he will grant use of those rights to the dentist. If damages are limited to the fair market value of the licensing fee, such an award will always generate a price below the total value of infringement to the infringer. Now the infringer has made effective use of risk aversion. The dentist can infringe the software at a nominal cost and implement the infringing software to increase profits. Once Developer brings suit down the road, the dentist will be liable for the fair market value of a license. If the software turns out to be a failure, the infringer is only

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225 *See id.*

226 *See id.*

liable for what he should have paid anyway, and he enjoys the benefit of minimizing cash outflows while maximizing cash inflows. If the software is a success, the dentist gets to reap significant V_{IT} and V_{IET} before paying C_L to Developer. Copyright damages must strip the infringer of the intangible benefits of risk aversion. To accomplish this goal, one must analyze the economics of infringement.

C. The Economics of Infringement

Value of infringement (V_I) is readily ascertainable by asking one question: How much money is saved by infringing rather than licensing even if the infringer must pay full damages to the owner?[227] V_I consists of all saved costs from infringement less damages that must be paid to the owner. Professors Blair and Cotter presented equations for determining the owner's expected return and the infringer's expected return.[228] Following this equation, π_i denotes the infringer's increased profits.[229] The probability of the infringement being detected is represented by P, and the probability of infringement going undetected is represented by (1 – P).[230] The expected return on infringing is represented as E[R], and F denotes damages potentially awarded.[231] The expected return for infringing is initially expressed as:

$$E[R] = P(\pi_i - F) + (1 - P)\pi_i$$ [232]

This article seeks to build upon this equation to show the need for value of use damages in software infringement cases. Several adjustments will be made. First, π_i will be represented as net revenues from infringement (R_{NI}) less costs of infringement (C_I). Second, for purposes of clarity, probability and the expectation operator will be removed from the equation. It will be assumed the owner will detect the infringement, bring suit, and recover all available damages. Third, V_{IT} and V_{IET} will be added to the equation. Initially, the equation is recreated as:

$$V_I = V_{IT} + V_{IET} + V_{DET} - F$$

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227 Worthy of mentioning again, reputational harm is removed from the analysis.

228 Blair & Cotter, *supra* n. 12, at 1619-20.

229 *Id.* at 1619.

230 *Id.*

231 *Id.*

232 *Id.*

This basic equation will fit both infringement of typical copyrighted works and software infringement. Because software infringers commit to the value of different transactions than infringers of typical copyrighted works, the equation must be split into two equations.

1. Value of Infringement of Typical Copyrighted Works

For typical copyrighted works, V_{IT} and V_{IET} carry either zero or negligible value. These values are removed from the equation:

$$V_I = V_{DET} + R_{NI} - C_I - F$$

This equation can be rewritten as:

$$V_I = R_{NI} - C_I - [A_D - (R_{NI} - C_I)]$$

$$V_I = 0 - A_D$$

$$V_I \leq 0,$$

Where A_D represents the owner's actual damages, and $(R_{NI} - C_I)$ represents the traditional award of defendant's profits. Although the owner is prevented from receiving any amount of A_D that is duplicative of $R_{NI} - C_I$, V_I may still be a negative number. Incentives to infringe are removed, and the owner is not unjustly enriched.

2. Value of Software Infringement

For software infringement, V_{IT} and V_{IET} are added back to the equation and, because the software infringer foregoes typical V_{DET}, it will be represented as π_R:

$$V_I = V_{IT} + V_{IET} + \pi_R - F$$

$$V_I = V_{IT} + V_{IET} + \pi_R - [C_L + \pi_R],$$

Where C_L represents a hypothetical licensing fee. Carried to its extent, the equation reveals:

$$V_I = V_{IT} + V_{IET} - C_L$$

$$V_I \geq 0.$$

The equation reveals an incongruity that works to the infringer's advantage. After awarding to the owner the infringer's profits on directly related sales, the infringer is still left with value of infringement of $V_{IT} + V_{IET} - C_L$. If only C_L based on a fair market value is then awarded to the owner, the

infringer retains benefit without payment to the owner. In effect, this anomaly creates a new intangible asset.[233] The infringer obtains all the rights in the copyright for a bargain licensing fee.[234] In other words, the infringer witnesses earnings on all the rights but only pays for partial rights.[235] The way to correct this incongruity is to base damages upon the infringer's investment/rate of return on the infringement (i.e. V_{IT} and V_{IET}).[236] By doing so, the damages awarded to the owner will properly align with the rights retained by the infringer.[237] Additionally, by awarding V_{IT} and V_{IET}, the infringer loses all benefits from risk aversion and market testing.

3. Establishing Value of Licensing and Value of Infringement to Deter Infringement

Optimally, the value of licensing must be greater than or equal to the value of developing a new product. Furthermore, the value of infringement must be less than both. The equation becomes clear:

$$V_L \geq V_D > V_I.$$

Theoretically, if this equation is true, the potential infringer will seek to either license or develop new software rather than infringe upon existing software. Two problems exist with this theory. First, even if $V_L \geq V_D > V_I$ is correct, V_I is still a positive number. Albeit smaller than V_L and V_D, it is still a positive return (i.e. a net gain). The infringer may still choose this smaller return to avoid the trouble of securing a license or developing a new product. Second, to effectively deter infringement, V_I must be a negative number. Bringing V_I to zero will not deter infringement—it will only make the infringer indifferent towards licensing or infringing. Readjusting the equation in light of damages, it must be refined to:

$$V_L \geq V_D > 0 > V_I.$$

This must be the case to make licensing existing software or developing new software more attractive to the potential infringer than infringement. The difficult part is ascertaining proper damage components for all transactions to establish this equation.

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233 Smith & Parr, *supra* n. 205, at 339.

234 *Id.*

235 *Id.*

236 *Id.* at 339-40.

237 *Id.* at 340.

V. CONSTRUCTING THE DAMAGE MODEL

With an understanding of the transactions involved in copyright as well as the need to bring V_I below zero, an appropriate damage model for software infringement may be constructed. Such a task is more simply stated than implemented. But the complexities of damages in software infringement will not dissipate themselves. Because the Patent Act and Copyright Act both serve the policy goal of benefiting public advancement, the patent law damages model should logically extend to copyright law.[238] The difficulties now facing copyright law have already been addressed and answered (to some extent) in patent law.[239] Moreover, patent case law is cultivated through the specialized Federal Circuit. It would be prudent to examine patent law damages for guidance in assessing damages for copyright transactions.

A. Damages for Value of Internal Transactions and Value of Indirect External Transactions

Value of indirect external transactions generates the biggest problem for the proposed damages model. Although V_{IET} and V_{IT} are the most valuable transactions to the software infringer, they are the most difficult transactions to compensate. The owner has four means of proving V_{IET}, all of which are particularly susceptible to a challenge of undue speculation. First, the owner may present evidence of the software's capabilities, including any V_{IET} enjoyed by the owner.[240] Second, the copyright owner can personally testify.[241] Third, the owner must put forth credible experts to accurately opine on the infringer's V_{IET}.[242] Fourth, the infringer's argument at the preliminary injunction stage may serve as a judicial admission of V_{IET} (this is unlikely).[243] Even more troubling than the owner's means of proof (or

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238 Blair & Cotter, *supra* n. 12, at 1642.

239 *Id*.

240 *E.g. Deltak*, 767 F.2d at 360-61 (evaluating damages based upon the infringer's benefit derived from use).

241 *See* Roberta Rosenthal Kwall, *Governmental Use of Copyrighted Property: The Sovereign's Prerogative*, 67 Tex. L. Rev. 685, 723 n. 181 (1989).

242 *See Id.*

243 *See generally* Ediberto Roman, *"Your Honor What I Meant to State Was . . .": A Comparative Analysis of the Judicial and Evidentiary Admission Doctrines as Applied to Counsel Statements in Pleadings, Open Court, and Memoranda of Law*, 22 Pepp. L. Rev. 981 (1995) (discussing judicial admissions).

lack thereof), is the fact that calculating damages places a great burden on the fact finder. Courts are already struggling with apportioning a proper award of defendant's profits when the defendant commits wholly to traditional direct external transactions.[244] Courts choose among several rational approaches, and each can produce dissimilar results.[245] Copyright law has until now attempted to solve these problems by awarding a licensing fee as the proper form of these damages.[246] A reasonable royalty rate, however, will more closely award V_{IT} and V_{IET}.

Patent law cases created the reasonable royalty award to compensate a patent owner who could not prove lost profits or an established royalty.[247] The Patent Act now provides for an award of no less than a reasonable royalty rate.[248] The Patent Act emphasizes value in establishing reasonable royalty rates.[249] The reasonable royalty rate is "for the use made of the invention by the infringer."[250] This focus "bears on value to the infringer and is seemingly unrelated to the need to compensate the patent owner . . . ."[251] At first, courts deciding reasonable patent royalty rates focused on the willing buyer-willing seller test.[252] This approach was abandoned after *Panduit Corp. v. Stahlin Bros. Fibre Works*.[253] In this case, the court determined that basing a reasonable royalty on the willing buyer-willing seller test would yield unjust results.[254] Limiting the infringer's liability to such a hypothetical bargaining scheme would allow the infringer to impose a compulsory license on the patent owner.[255] Thus, it is possible for reasonable royalty rates based on value to the infringer to exceed hypothetical licensing fees.[256] This compensates the owner and discourages infringement[257] (which

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244 Dane S. Ciolino, *Reconsidering Restitution in Copyright*, 48 Emory L.J. 1, 22-23 (1999).

245 *Id*. at 22.

246 *Id*. at 22-23.

247 Donald S. Chisum, *Chisum on Patents* § 20.03[3] (M. Bender & Co. 2003).

248 35 U.S.C. § 284 (2000).

249 Paul M. Janicke, *Contemporary Issues in Patent Damages*, 42 Am. U. L. Rev. 691, 717 (1993).

250 *Id.*

251 *Id.*

252 Chisum, *supra* n. 247, at § 20.03[3][a].

253 *Id.* (discussing *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152 (6th Cir. 1978)).

254 *See id*.

255 *Id.*

256 Janicke, *supra* n. 249, at 717.

coincidentally are the twin goals of copyright damages discussed above in Section I). In determining damages:

> The [Federal Circuit] has given great force to its concept of using hypothetical negotiations not as a mirror of industry standards, but as a device to aid the cause of justice. In what is now a long line of cases, the Federal Circuit has affirmed awards substantially higher than would have been negotiated under industry norms.[258]

Precisely how much the reasonable royalty should exceed the hypothetical rate remains an unanswered question.[259] In *Mahurkar v. C.R. Bard, Inc*., the Federal Circuit rejected the district court's method of calculating the reasonable royalty at 25.88% and then adding a 10% "Panduit kicker" to increase the percentage.[260] But in *Maxwell v. J. Baker, Inc*., the Federal Circuit approved the district court's instruction asking the jury to determine both a reasonable royalty rate and additional damages to compensate for infringement.[261]

A reasonable royalty rate will come much closer to eliminating V_{IT} and V_{IET} than a hypothetical licensing fee. As will be discussed in Subsection C below, the reasonable royalty rate need not eliminate V_{IT} and V_{IET} to effectively deter infringement. Courts should continue to first assess a hypothetical licensing fee using the same conservative measures they have been using. Next, courts should conservatively impose an additional "kicker" on top of that licensing fee to reach the reasonable royalty rate.

B. Damages for Direct External Transactions

Although software infringers typically forego the traditional V_{DET} of selling the infringing software to consumers, the infringer may still witness significant V_{DET} in the form of profits from related external transactions (π_R). Patent law defines π_R as collateral sales.[262] In terms of software, collateral sales are those sales of goods or services the infringer secured by promoting his possession of the infringing software.[263] Collateral sales have not been

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257 *Id.* at 722; *see Sherry Mfg. Co. v. Towel King of Fla., Inc*., 220 U.S.P.Q. 855 (S.D. Fla. 1983).

258 Janicke, *supra* n. 249, at 720.

259 *Id.* at 721.

260 Chisum, *supra* n. 247, at § 20.03[3][a]; *see Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572 (Fed. Cir. 1996).

261 *Id.* (discussing *Maxwell v. J. Baker, Inc.*, 86 F.3d 1098 (Fed. Cir. 1996)).

262 Janicke, *supra* n. 249, at 712.

263 Such an award was suggested by *Business Trends*. *See supra* § II.C.

discussed in copyright cases, but the Copyright Act permits damages for any profits of the infringer that are "attributable to the infringement."[264] In order to bring V_I below zero, it is crucial to include π_R in the damage model.

C. Automatic Double Damages

Using the proposed damage model set forth in this article, software infringement damages will be assessed much closer to the infringer's actual value of infringement. Nonetheless, successful plaintiffs will not have the means to sufficiently prove damages for all the transactions to bring V_I to a negative number. This article proposes an automatic double damage provision for software infringement cases to alleviate this discrepancy. The Patent Act and Lanham Act both provide discretionary treble damage provisions.[265] Moreover, previous authors and courts have set forth arguments for imposing exemplary damages in copyright.[266] Seeing no need for exemplary damages, an automatic double damage provision is presented here for two reasons. First, the damage model presented in this article will bring software infringement damages sufficiently close to the defendant's actual gain from infringement.

Software infringement cases to date have awarded damages that utilize the equation:

$$0 < F < V_I,$$

where F represents damages awarded. The proposed model in this article should yield the equation:

$$V_I - F < F - 0,$$

where F represents the sum of the reasonable royalty rate (RRR) + π_R. In simpler terms, the proposed model should yield F that is closer to V_I than it is to zero. Once F is doubled, V_I will fall below zero and effectively deter infringement. Thus, implementing the damage model proposed in this article, the equation for V_I is:

$$V_I - F < F$$

$$V_I - [RRR + \pi_R] < [RRR + \pi_R]$$

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264 17 U.S.C. § 504(b).

265 35 U.S.C. § 284; 15 U.S.C. § 1117(a).

266 Ciolino, *supra* n. 244, at 62-63; *see TVT Recs. v. The Island Def Jam Music Group*, 262 F. Supp. 2d 185, 186-87 (S.D.N.Y. 2003) (suggesting punitive damages would be available in copyright damages if the requisite malice was proven by the plaintiff).

$V_I < 2[RRR + \pi_R]$.

Most importantly, the proposed damage model brings V_I below zero to yield:

$V_I < 0 < 2[RRR + \pi_R]$.

Because the stated goal is now met, there is no need for treble damages. V_I is negative, and although the owner may receive some windfall, he will not receive a true double recovery. Second, an automatic provision provides greater certainty than a discretionary provision. If the double damage provision remains discretionary (up to double damages but any amount below that), there is still a sufficient probability the total damage award will yield a positive V_I.

CONCLUSION

Copyright law serves to benefit the public. Authors receive protection to derive value from their works. These authors will then make their works available (for a price) to the public. Once so available, future authors will observe these copyrighted works. They will begin generating ideas and molding their way of thinking. Most importantly, they will in turn create new works. The process repeats itself, bestowing upon the public a wealth of useful arts. Infringers disrupt this process. Why should authors create works if infringers reap all the benefits? We want more and more works available to the public; we do not care who provides them. Potential software infringers are free to look at the existing software, study it, even use it, and then create a superior software. If the potential infringer is not willing to make that commitment, we want him to pay the owner so the owner will make the next advancement. At the end of the day, infringement robs the public. If the transactions involved in copyrighted works are not properly identified and included in the software infringement damage model, then copyright law will provide additional works at an inefficient rate. Ultimately the public will incur the most harm. By identifying and properly remedying each transaction in copyright, the public policy goals of copyright will be fulfilled.