Articles

DAMAGES CALCULATIONS IN INTELLECTUAL PROPERTY CASES IN CANADA*

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ABSTRACT

In intellectual property cases, there are two types of monetary remedy: damages and an accounting of profits. Damages represent the patentee's loss and are the default remedy in the sense that a court is obliged to award damages on proof of infringement and consequent loss. This article reviews the law of damages in intellectual property cases. The focus is on patent cases, although the reasoning generally applies in trade-mark and copyright cases. It revises and updates an article published in 2001, particularly expanding the discussion of causation in light of recent Supreme Court jurisprudence. It is a companion to an article dealing with the accounting of profits remedy that appeared in issue 24(1) of this journal.

RÉSUMÉ

Dans les litiges concernant la propriété intellectuelle, il existe deux types de recours pécuniaires : les dommages-intérêts et la comptabilisation des profits. Les dommages-intérêts représentent la perte subie par le breveté et le recours par défaut au sens où un tribunal a l'obligation d'accorder des dommages-intérêts sur présentation de preuves de la contrefaçon et de la perte conséquente. Le présent article passe en revue ce que prévoit la loi pour ce qui est de dommages-intérêts dans des causes concernant la propriété intellectuelle. L'accent y est mis sur des causes de brevets, mais le raisonnement s'applique généralement tout autant à des causes de marques de commerce et de droit d'auteur. Il s'agit d'une révision et d'une mise à jour d'un article publié en 2001. En particulier, la discussion sur le lien de causalité est élargie à la lumière de récente jurisprudence de la Cour suprême. Cet article accompagne un article traitant de la comptabilisation des profits, lequel a été publié dans le précédent numéro de ce bulletin.

* Submission to the editor, July 21, 2008. This is an abridged version of a longer monograph, which may be downloaded from the Cole & Partners website at www.coleandpartners.com/publications.php. It is also a revised and updated version of an article of the same title by Alexander J. Stack, A. Scott Davidson, and Stephen R. Cole, which appeared in 18(1) *Canadian Intellectual Property Review* 1. The authors wish to thank Professor Stephen Waddams for useful discussions; Immanuel Goldsmith, Q.C., whose comments and improvements in the 2001 article were very much appreciated; and Kelly Murray, who assisted with research in the present article. The views expressed in this article are those of the authors and not those of Cole & Partners.

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1.0 INTRODUCTION

In intellectual property cases, there are two types of monetary remedy: damages and an accounting of profits.[1] Damages represent the patentee's loss and are the default remedy in the sense that a court is obliged to award damages on proof of infringement and consequent loss.

This article focuses on damages in patent cases, although the reasoning generally applies in trade-mark and copyright cases. It revises an earlier article published in 2001.[2] A companion article deals with the accounting of profits remedy.[3]

1.1 Basic Principles

Damage principles in intellectual property cases are generally consistent with a modern understanding of general tort principles. This was emphasized by the English Court of Appeal in *Gerber Garment v. Lectra*:

> Infringement of a patent is a statutory tort; and in the ordinary way one would expect the damage recoverable to be governed by the same rules as with many or most other torts. We were referred to Halsbury's Laws of England … to establish the elementary rules (1) that the overriding principle is that the victim should be restored to the position he or she would have been in if no harm had been done, and (2) that the victim can recover loss which was (i) foreseeable, (ii) caused by the wrong, and (iii) not excluded from recovery by public or social policy. The requirement of causation is sometimes confused with foreseeability, which is remoteness.[4]

The plaintiff bears the burden of proving its loss, and damages are compensatory, not punitive.[5]

1.1.1 Causation: The "But For" Test

The "but for" requirement, which establishes causation, is central in intellectual property damages. Only the harm caused by an infringement is compensable as damages. Damages are measured by the difference between the actual position of the plaintiff and the position of the plaintiff *but for* the infringement: the position of the plaintiff if the infringement had not occurred.[6]

The "but for" test requires an answer to the necessarily hypothetical question of what would have happened if the defendant had not infringed.[7] Assessing what would have happened can be difficult to do because the market for products and services is dynamic, subject to the forces of competition and continuing innovation, and fluctuating in response to advertising, distribution, microeconomic factors internal to the business, and macro factors external to the business. The notion that the plaintiff would have continued in exactly the same manner as it was just prior to the infringement is rarely sound.

To investigate the "but for" position, it is necessary to determine how the plaintiff would have exploited the intellectual property. The answer is inferred from the operating reality of the rights holder. Actual historical patterns are important evidence, of course, but business plans, strategic plans, budgets, mission and vision statements, and the like must also be considered. With long-established businesses, one can determine the most likely exploitation plan by examining established strategy. With early-stage technology companies, one must rely much more on "what if" scenarios.

For these reasons, assessing damages in intellectual property cases requires a blend of judgment and principle. As Lord Shaw stated in *Watson, Laidlaw & Co.*, "[t]he restoration by way of compensation is therefore accomplished to a large extent by the exercise of a sound imagination and the practice of the broad axe."[8]

1.1.2 Other Limits on Recovery: Remoteness and Foreseeability

Causation is not the only limit on recovery. Losses that are in fact caused by an infringement may nonetheless be unrecoverable if they are too remote. As the quotation from *Gerber v. Lectra* indicates, in modern tort law "remoteness" is not a test but a label for the conclusion that losses that satisfy the causation requirement should nonetheless be excluded. A conclusion that a loss is too remote is always based on some reason of "public or social policy"; a simple assertion that a loss is "too remote" is not usually accepted as persuasive.[9]

The foreseeability requirement (a form of remoteness) is the best established limit on recovery in tort law apart from causation.[10] Generally, however, it plays little role in intellectual property cases, because it is only the nature of the loss, and not its extent, that needs to be foreseeable.[11] Because the nature of the typical loss in intellectual property cases—lost sales or licensing revenues—is always foreseeable, the foreseeability requirement is usually easily satisfied.[12]

In *Gerber v. Lectra*, the Patent Court and the English Court of Appeal extensively discussed remoteness in patent cases, holding that while remoteness does operate in intellectual property cases separately from questions of causation or foreseeability, it should not be based on an amorphous fear of "extending the monopoly of the patent": so long as the damages are foreseeably caused by the infringement, "there is no question of setting up a monopoly at all—there is only an investigation into the effect of the invasion of one."[13]

1.2 Summary and Structure of Article

In summary, the plaintiff is presumptively entitled to all and only those losses in fact caused by the infringement. Loss of profits caused in fact by the infringement is the difference between the profit actually earned ("actual position") and that which would have been earned but for the breach (the "but for" position).[14] Specific losses caused by the infringement on this "but for" test may be excluded as being too remote. Foreseeability is a well-established limitation on remoteness, but it rarely comes into play in intellectual property cases. Other types of remoteness limitations may in principle also come into play if some public or social policy so requires, but actual examples of such limitations are rare. Furthermore, "extending the monopoly of the patent" is a dubious reason to refuse to award damages.

Thus, as a first step, a court hearing a damages reference must determine the plaintiff's operating reality to find the basis for restoring the plaintiff to where it would have been but for the infringement. If the intellectual property was usually exploited through licensing, the award is based on a royalty award, as described in section 3.0 below. If the intellectual property was exploited through manufacturing and distribution, the referee can divide the infringer's sales into those the rights holder would have captured absent the infringement, and those the rights holder would not have captured. For the sales the plaintiff would have captured, the court

Figure 1 Scheme for Damages

- Goal: to restore the person who has sustained injury and loss to the condition in which he or she would have been had he or she not so sustained it
- Method: determine the *operating reality* of the plaintiff as it would have been but for the breach

Operating reality

Use does not damage plaintiff	→	Reasonable royalty

Use damages plaintiff

1. If plaintiff would have licensed at a given rate	→	Apply royalty (effectively, the reasonable royalty)
2. If plaintiff would have exploited through manufacture and sales	→	Lost profits
3. If operating reality of plaintiff is not definitive (parties cannot prove 1 or 2)	→	Reasonable royalty

will award lost profits, as described in section 2.0 below. For those sales the plaintiff would not have captured, the court will award the rights holder a reasonable royalty on the sales, also described in section 3.0. Finally, if the parties cannot establish either the lost profits or a standard licensing policy, the default remedy is the reasonable royalty, again discussed in section 3.0. This scheme is diagrammed in figure 1. Section 4.0 discusses miscellaneous items, including taxes and transfer pricing.

2.0 LOST PROFITS

A plaintiff is entitled to recovery for its lost profits. If the plaintiff would usually have exploited the invention by selling the product itself, the plaintiff can claim damages for lost sales.[15] A plaintiff can also recover lost profits for price reductions forced by the infringement, lost profits from higher production costs, sales of convoyed goods, loss of a springboard advantage, and, on appropriate facts, lost profits from subsidiary companies. Speaking broadly, lost profits are calculated as the *full profit* on the *lost sales* plus the *lost profit* on the plaintiff's *actual sales*.

2.1 Lost Profits on Lost Sales

The burden is on the plaintiff to prove the number of sales that it would have captured but for the infringement. A plaintiff may be compensated for lost sales both inside and outside Canada.[16] Usually, a plaintiff will prefer to receive an award of lost profits for lost sales rather than an award of a royalty for infringing sales, be-

cause a royalty typically splits the profit of the defendant between the plaintiff and the defendant.

The defendant is not an insurer against a general market crash, nor can the plaintiff complain of sales lost from legitimate competition. Changed external factors, such as an economic depression that reduces sales generally, or a rise in the price of raw materials that increases the plaintiff's production costs, must be taken into account in determining what the plaintiff's profits would have been but for the infringement. Conversely, if the market for the plaintiff's product is generally expanding, extrapolation of an increasing sales trend may be appropriate in determining what would have happened but for the infringement, subject to internal capacity and other similar internal factors.

As always, the fundamental question is, "What would in fact have happened but for the infringement?" This should be answered in a holistic fashion having regard to all relevant factors, both company-specific and external. These factors will offer opportunity for profit and present constraints and risk of loss. Where possible, the answer should be based on an economic model that captures the dynamic interplay of market forces as one might reasonably anticipate them to have played out over the relevant period with the benefit of hindsight.

Care is needed in using hindsight to reconstruct the "but for" model. Because the question is what the plaintiff would have done at the time of the decision, only the information available to the plaintiff at that time should be considered in determining what decision would have been made. The parties cannot argue for a course of action that hindsight shows would have been most advantageous, if all considerations known at the time pointed in another direction.

Though the *decisions* that the plaintiff would have taken but for the infringement are assessed without the benefit of hindsight, the *consequences* of those decisions are assessed with the full benefit of hindsight. For example, if a licensing agreement would have been entered into but for the infringement, the royalty that would have been charged is based on a hypothetical negotiation carried out with the information available to the parties at that time, although the sales on which the royalties are payable are the actual sales—sales determined with the benefit of hindsight—during the period of infringement.[17]

These general principles imply that all factors that would have affected the plaintiff's profit should be taken into account in determining what profits the plaintiff would have made but for the infringement. In *AlliedSignal*, Heald D.J. enumerated a list of such factors that had been considered in prior Anglo-Canadian decisions:[18]

1. advantages of the patented products over competing products;[19]
2. the advantages of the infringing product over the patented product;[20]
3. the market position of the patentee;[21]

4. the market position of the infringer;[22]
5. the market share of the patentee before and after the infringing product entered the market;[23]
6. the size of the market both before and after the infringing product entered the market;[24] and
7. the capacity of the patentee to produce additional products.[25]

Heald D.J.'s opinion in *AlliedSignal* provides an illustration of how factors unrelated to the infringement may affect damages. He found that the patented product had significant advantages over the non-infringing alternatives.[26] However, the infringing product had superior quality control compared with the plaintiff's product.[27] Heald D.J. found that for at least one important customer the quality problems with the plaintiff's product were sufficiently serious that the evidence did not establish that but for the infringement, the plaintiff would have made the sales actually filled by the defendant. Consequently, the plaintiff was awarded a reasonable royalty rather than lost profits in respect of that customer.[28]

It is relatively straightforward to show that there was market demand for the infringed products if the court has evidence of the infringing sales.[29] However, other items require much more detailed and careful market analysis. For example, showing that the plaintiff would have captured the defendant's sales requires proving that the intellectual property has market power, or that it could influence the market and draw sales to the item. This argument depends heavily on the definition of the marketplace, including consideration of possible substitutes, classes of customers, demand and supply elasticities, and divisions by geography.[30] If the product in question is a widely distributed and purchased consumer product, it would generally be appropriate to look to market research, surveys, and market share analysis. In contrast, if the infringing products are expensive, infrequently purchased items, it may be possible and appropriate to gather evidence on individual sales from specific customers.[31] The choice between these two methods of analysis depends on the case at bar.

The intellectual property owner must also demonstrate how it would satisfy market demand to capture these sales.[32] Alternatives include in-house production with existing or expanded capacity, outsourcing, joint venturing, and the like. The most appropriate basis will depend on the operating reality of the rights holder. The quantum of lost profits will be a function of the method by which demand is satisfied.

Having decided, numerically, on the lost sales and resulting revenues, the court needs to determine profits to assign to them, usually on a profit per item basis. In order to determine profit, cost needs to be determined. In the determination of cost there is a choice between costing methodologies, which arises similarly when disgorged profits are determined in an accounting of profits. Those methodologies include both absorption and differential methods as well as certain opportunity or economic-related costs.[33]

The time over which the profits would have been earned, the circumstances of the plaintiff, physical sales volumes, and capacity constraints—the operating reality of the plaintiff—will push one to a logical choice between absorption and differential accounting. They are not really alternatives in the computation of damages: there is an appropriate place for the application of each. In *Domco*, Collier J. held as much, saying that the appropriate methodology depended on each case's "own particular facts and circumstances."[34]

As a general principle, over a short term, the variable cost or differential costing method is appropriate. Where costs are truly fixed and would have been incurred by the plaintiff in any event, then it is likely inappropriate to deduct these costs a second time from the damage award. Over a long term, the absorption method or full costing method would be appropriate. In fact, it would be equivalent to the differential method because over the long term many fixed costs become variable. Where fixed costs need to be incurred to generate profits, they are an appropriate deduction. The applicability of certain opportunity or economic-related costs will depend on the facts; there is no general rule.

If, owing to the infringement, the plaintiff put its assets to an alternative profitable use, then a strict interpretation of the principle of restoration suggests that these profits should also be deducted from the award to arrive at an amount that will restore the plaintiff to where it would be but for the infringement.[35] Presumably, the basis for this argument would be proof that the plaintiff had in fact enjoyed this "opportunity benefit" which it would not otherwise have enjoyed. However, there is no example of this explicit argument in the surveyed intellectual property case law or literature.

It should be noted that the advantages of an invention are often reflected as much in increased sales as in increased price. Indeed, depending on the patentee's business strategy and operating reality, there may be no extra profit per unit sold at all, if the innovation is used to capture market share rather than increase the percentage of profit per unit.

One should not be confused by the use of subsidiary tests in U.S. law. The United States uses the same "but for" test as the fundamental principle in determining causation. However, the courts have also devised "subsidiary tests," such as the *Panduit* test, that state that given a particular set of facts, causation is inferred.[36]

2.1.1 Relevance of Defendant's Non-Infringing Alternatives

It is not just the plaintiff's alternatives and strategies that affect the "but for" scenario; often, the *defendant's* hypothesized behaviour but for the infringement will also affect the plaintiff's "but for" profits. For example, if the defendant was an established company with a good reputation and a sound product aggressively entering the market, it may be reasonable to infer that the defendant would have captured a portion of the market even without an infringing feature,[37] while a new company without a reputation would have encountered more difficulty in making sales in the

absence of an infringing feature.[38] As another important example, it will often be necessary to consider the non-infringing alternatives available to the defendant at the time of the infringement in determining what the defendant would most likely have done but for the infringement. A defendant with a very close non-infringing substitute available to it might well have captured a substantial part of the market with the non-infringing product that it in fact captured with the infringing product. On the other hand, if there is no close non-infringing substitute, the defendant might not have entered the market at all. The plaintiff's "but for" profits will be quite different in the two cases.

The 1888 decision of the House of Lords in *United Horse-Shoe & Nail v. John Stewart & Co.*[39] is often cited (for example, in *Domco Industries*[40] and *Jay-Lor*[41]) for the principles that damages are computed on the assumption that the infringer had not entered the market at all,[42] and that it is not relevant that the plaintiff would have been equally hurt by the defendant if the defendant had produced non-infringing products. On this point, however, *United Horse-Shoe* may be inconsistent with modern Canadian cases and perhaps should not be followed in Canadian law today. The difficulty with the decision is that the defendant's non-infringing alternatives are clearly relevant in fact to what would most probably have happened but for the infringement. Ignoring this factor is inconsistent with the general principle that the plaintiff is to be put in the position it would have in fact been in but for the infringement, as best as this can be determined.

The *United Horse-Shoe* distinction conflicts with decisions in other cases. In *Meters Ltd. v. Metropolitan Gas Meters Ltd.*, for example, the patented invention was a small but important part of a gas meter.[43] The defendants had sold 19,500 infringing meters and the plaintiff patentee claimed lost profits on the diverted sales. Eve J. noted that while the patented mechanism was an attractive feature that was important to many customers, the defendant had strong ties with some customers and its meters had their own attractive qualities apart from the infringing part.[44] In the end, he found that 16,000 of the meters would have been sold by the defendant even had it not infringed, and 3,500 of the defendant's sales would have gone to the plaintiff but for the infringement. Eve J., affirmed on this point by the Court of Appeal, held that the lost profit on the whole meters should be awarded only in respect of the 3,500 diverted sales.[45]

More broadly, *United Horse-Shoe* seems to contradict the approach to causation taken by the Supreme Court of Canada in the context of accounting of profits and equitable compensation remedies for intellectual property. While these are not damages cases, the Supreme Court has recently stated that the same causation principle underpins all non-punitive remedies.[46]

In *Cadbury Schweppes v. FBI Foods*,[47] the defendant had wrongfully used confidential information in order to develop a competing product. The plaintiff sought an award of the full market value of the information in question.[48] The Supreme Court held that the plaintiff was entitled to compensation reflecting the lost profit on sales made by the defendant that would otherwise have gone to the plaintiff. The nature

of the harm claimed was thus exactly the same as is claimed by a patentee claiming lost profits during a period of infringement.[49]

The trial judge had found that if the defendant had not misused the confidential information, the defendant would have independently developed a competing product within 12 months. The Supreme Court affirmed, noting that

> [m]oral indignation is not a factor that is to be used to inflate the calculation of a compensatory award. The respondents' entitlement is to no more than restoration of the full benefit of this lost but time-limited opportunity.[50]

It is important to note that the juice sold after the expiry of the 12-month period was in fact based on the confidential information; the defendant never actually undertook to independently develop its own juice recipe. The basis for the 12-month limitation was that the defendant would, hypothetically, have done so, but for the misuse of confidential information.

The Supreme Court also looked to the hypothetical actions of the defendant in *Schmeiser*, an accounting of profits case.[51] In *Schmeiser*, the defendant grew herbicide-resistant canola that infringed the plaintiff's patent.[52] However, there was no evidence to show that the defendant took advantage of the herbicide resistance by spraying, and he sold the canola seeds for crushing rather than as seed, so the sale price of the infringing canola was no higher than that for unpatented seed.[53] The plaintiff argued that it was entitled to all of the defendant's actual profits regardless of whether the defendant gained material advantage from the infringement. However, the Supreme Court held that the plaintiff was entitled only to the difference between the profits the defendant actually made and those that he would have made but for the tort. On the facts, the defendant would have made identical profits if he had not infringed, and the plaintiff was awarded zero profits.

2.1.2 Lost Profits Resulting from Price Reductions

A successful plaintiff can also claim damages for price reductions forced by competition from the infringer.[54] Such a price reduction may be considered to be caused by the infringement, notwithstanding that the direct cause of the price reduction was the plaintiff's decision.[55]

There is case law to the effect that, for this head of damages to be sustained, the plaintiff's price reduction must have been reasonable in the circumstances,[56] must have been in response to the defendant's lower price, and must not lower the plaintiff's price below that of the defendant.[57] However, these cases followed the "natural and direct" remoteness test that has been supplanted in modern tort law. In the absence of more recent case law, detailed discussion of this point is difficult. It can be said that losses from price reductions are not generally too remote, though in particular instances they may be.[58]

It appears that there has never been a Commonwealth case where it was successfully alleged that the effect of the competition was only to prevent the plaintiff from

making price increases. This argument was accepted as a possible ground of damage by both parties in the *AlliedSignal* reference, but Heald D.J. did not rule on the issue because there was insufficient evidence.[59] Similarly, this head of damages was accepted as a possibility in the South African Court of Appeal, but again failed for a lack of evidence.[60] However, American courts have awarded damages for such price effects where sufficient proof of the effect has been offered.[61]

As narrowly interpreted in the existing case law, this head of damages rests on evidence of the timing of the price reductions compared with the price in the market. A court may reduce the award from what it otherwise would have been if it thinks that the plaintiff's reduction in price led to an increase in the size of the market,[62] essentially taking into account the plaintiff's mitigation efforts. Holding the market size constant, if the reduction was only partly due to the infringing acts of the defendant, an award may be made with respect to the part of the loss that results from such reduction.[63] The profit from a justified higher price may be claimed for both the sales the plaintiff actually made and the sales it would have made but for the infringement.

2.2 Increased Costs

Lost profits on account of increased costs of the plaintiff caused by lower volumes resulting from the defendant's infringement can also be a successful point of claim. These higher costs are often called a "loss of economies of scale." Manufacturing economies of scale can include:

- lower bulk purchasing prices from suppliers;
- lower labour and material costs resulting from better utilization when manufacturing at higher batch sizes;
- costs of start-up and shut-down if the manufacturing facility is sometimes idled due to lower production volumes; and
- higher error ratios and therefore higher costs per run.

Other expenses may increase absolutely or relatively to meet competition from the infringer and can be included in a damage claim. These include heavier advertising expenses, adding sales personnel, the increased use of discounts, or increased investment in a distribution system to improve service. Similarly, an award for increased financing costs was made in the *Domco* case.[64]

2.3 Lost Profits from Lost Convoyed Sales

Convoyed sales are sales of goods that are typically or often sold with an infringing item, but the goods themselves are not caught by the intellectual property in question. The issue is particularly important in industries where a patented product is sold at a modest price, with most of the profit being generated by a service contract or sale of supplies.[65]

The issue of convoyed sales gained prominence in the English case of *Gerber v. Lectra*.[66] Although it has been argued that convoyed sales are always too remote,[67] Jacob J. held that under the principles of modern tort law, all damages are compensable if they were foreseeable and caused in fact by the infringement, and that damages for the loss of convoyed sales are no exception to this general principle.[68] Jacob J.'s reasoning was unanimously approved by the English Court of Appeal on this point.[69] Lost profits from convoyed sales were also recently awarded in the Canadian *Jay-Lor* case.[70]

2.4 Lost Profits from Springboard Damages and Early-Adopter Advantages

A patentee or other intellectual property holder may enjoy residual advantages even after the formal term of protection is over. After expiry of a patent, competitors are entitled to enter the market, but it will take time for them to build up a customer base and start taking a share of the previously protected market. Infringement allows a competitor a head start in gaining market share; a competitor who infringed prior to the expiry will have a larger market share on expiry than one who started competing only the day the patent expired. Conversely, the patentee will have a smaller market share in the period just subsequent to expiry than it would have had in the absence of infringement.

The quantum of this residual advantage to the infringer is a function of the market share wrongly taken, the duration of the advantage, the infringer's profitability, the plaintiff's market response, and other factors. The plaintiff's loss is a function of the plaintiff's unique responses to the infringer's actions. The compensable damages are the result of dynamic factors—internal and external to the plaintiff. Damages of this nature are known by various descriptive terms: "springboard," "head start," "bridgehead," or "accelerated entry" damages.

The issue was raised and springboard damages were awarded by Jacob J. in *Gerber*,[71] and were unanimously and expressly approved by the Court of Appeal. They have been awarded for patent infringement in the United States,[72] and have been accepted as a possible head of patent infringement damages—though not awarded—in Canada.[73]

Successful technology companies have demonstrated the importance of being an early entrant into a market and capturing market share. Convincing customers to be early adopters of their product often ensures continued customer loyalty. Once technology is embedded in a customer's operations or product, it can be difficult and expensive to dislodge. Customers who have successfully integrated a particular software technology are generally, subsequent to adoption, a recurring source of service, upgrade, and consulting revenues. A plaintiff who is denied early market entry and customers' early adoption of its technology will have lost the broad base of benefits thereof. The view that such losses, as with "springboard" losses, should be compensable in damages is consistent with the principle that the plaintiff is presumptively entitled to all losses caused in fact by the infringement.

2.5 Losses of Subsidiary Companies

The English Court of Appeal in *Gerber*[74] unanimously held that the parent of a subsidiary can recover damages in respect of losses at a subsidiary company even if the subsidiary has no cause of action against the defendant on the general principle that the plaintiff may recover all losses caused by the infringement. The more difficult question is in respect of the standard of proof needed to support such a claim. While the point is not definitively established in Canada, the weight of authority is that the plaintiff must explicitly prove the quantum of damage to the subsidiary that would flow through to the parent company.

In *Gerber* itself, Staughton L.J. would have adopted a rebuttable presumption that a dollar lost by a wholly owned subsidiary is equal to a dollar lost by the parent,[75] but Hobhouse L.J. and Hutchison L.J. in the majority held that explicit proof was required. In *Mars Inc. v. Coin Acceptors Inc.*, the U.S. Court of Appeals for the Federal Circuit also held that a patentee cannot claim profits lost by a subsidiary simply on the basis that such profits must "inherently" flow through to the parent company.[76] The rationale for requiring explicit proof of losses is that because of the impact of taxes and corporate structure, one dollar lost to the subsidiary does not in fact necessarily represent one dollar lost to the parent. The problem is compounded when the subsidiary is less than 100 percent owned by the parent. The argument in favour of the presumption advocated by Staughton L.J. is that difficulties of proof might result in real losses being denied.

In the Canadian case of *Domco v. Armstrong*, Prothonotary Preston allowed Domco to claim $625,000 for damages suffered by the subsidiaries. Collier J. disallowed this award on appeal, stating:

> The damages are only recoverable by the legal entities who incurred them. Further, the contention that Domco would have been paid increased dividends, or enlarged its equity, is too speculative, if not too remote. The subsidiaries could have applied the "lost" profits in many ways, purely for their own advancement or benefit.[77]

This does not appear to establish a per se bar against recovery of profits lost by subsidiaries. The principle relied on by Collier J., that "damages are only recoverable by the legal entities who incurred them," was also stressed by the majority in *Gerber*, as was the speculative nature of the quantum of the loss. As Collier J. also noted that there was nothing in the plaintiff's pleading advancing this kind of loss, this decision is consistent with the view that such damages may be recoverable, but must be proven .

Thus it appears likely that losses suffered by a subsidiary, if properly pleaded and proven, would be accepted in Canada as a proper head of damages to a parent. However, that there is some suggestion in *Domco*, as well as in *Mars Inc. v. Coin Acceptors Inc.*, that such losses could be too remote as a matter of law, though in neither case was it necessary to deal with this question because of the failure of proof. *Gerber*, of course, is good authority for the proposition that such losses are not too remote.

2.6 Lost Post-Trial Profits—Future Profits

In principle, damages encompass a loss of future profits on sales that, but for the infringement, would have been made after the date of the trial. Where there are lost profits after a date of trial that are clearly attributable to an infringement, they are best computed by application of a discounted cash flow technique. Care needs to be taken in this exercise because the projection entails the interaction of many variables. The discount rate must be carefully chosen to reflect only the relevant execution and market risks. It should not be so large as to eliminate too much of the very profit being computed. The discount rate will very much depend on the quality of the financial inputs. Where there are clearly lost future profits but they cannot be specifically traced to identifiable sales, or specific assets, tangible or intangible, the lost future profits are often characterized or quantified under the nomenclature of "goodwill." In principle, lost goodwill attributable to the infringement should also be compensable in the same manner as lost future profits from identifiable assets. However, it may be difficult to establish the value of the lost goodwill because of lack of specificity. Again, discounted cash flow techniques are usually the best tool for computing the value of lost goodwill.[78]

3.0 ROYALTIES

Royalty calculations are generally made in three contexts: (1) where the plaintiff typically exploits its intellectual property through licensing; (2) where the plaintiff exploits its intellectual property directly, but the defendant has made sales that would not have been captured by the plaintiff in any case (either because an individual purchaser would not have purchased from the plaintiff, or because the defendant has made sales into a market that was not or could not be accessed by the plaintiff); and (3) where the parties have failed to prove lost profits.

The method for determining reasonable royalties has been given a number of formulations in different cases. A recent method is the "hypothetical negotiation," where a reasonable royalty rate is "that which the infringer would have had to pay if, instead of infringing the patent, [the infringer] had come to be licensed under the patent."[79] Or, as was said by Falconer J. in the reference in *Catnic Components*:

> I have to consider "what would have been the price which … could have reasonably been charged" for the plaintiffs' permission to use the patented invention as the defendants did. In his opinion in the *General Tire* case Lord Salmon thought that it followed from Fletcher Moulton L.J.'s judgment that in a case where there is no established market rate the assessment must be on the basis of what royalty a willing licensee would have been prepared to pay and a willing licensor to accept.[80]

It should be emphasized that the fundamental concept is that of a reasonable royalty. The concept of a hypothetical negotiation is not a rule respecting damages, but is simply a technique for arriving at a reasonable royalty, albeit one that has wide application. In *General Tire* the concept was appropriate, because the patentee was clearly willing to licence, though there was no established market rate. But as the

U.S. Federal Circuit has emphasized, the hypothetical negotiation approach may be strained beyond usefulness when it is established on the facts that the patentee would not have granted a licence on any terms for the use made by the defendant.[81] In some cases, the price at which the rights holder acting reasonably would have licensed its intellectual property is higher than the maximum price that the particular infringer would have been willing, or perhaps able, to pay—for example, when the defendant cannot exploit the invention as effectively as the patentee.[82] As discussed in section 3.7 below, the treatment of this situation depends on the remedial theory being applied; generally, however, the principle of compensation and the "but for" test implies that the court should act to restore the licensor to where it would have been absent the infringement, not to where the licensor would have been if it had licensed the infringer.

3.1 Established Licences

Strong evidence of the market rate for a licence exists if the plaintiff has an established history of negotiating licences for products comparable to the one that has been infringed. The most straightforward application of historical licences occurs where the patentee routinely granted licences at a certain rate. As stated by Fletcher Moulton L.J. in *Meters v. Metropolitan Gas Meters Ltd.*:

> There is one case in which I think the manner of assessing damages in the case of sales of infringing articles has become almost a rule of law, and that is where the patentee grants permission to make the infringing article at a fixed price—in other words, where he grants licenses at a certain figure. Every one of the infringing articles might then have been rendered a non-infringing article by applying for and getting that permission. The court then takes the number of infringing articles, and multiplies that by the sum that would have been paid in order to make the manufacture of that article lawful, and that is the measure of the damage that has been done by the infringement.[83]

However, it must be emphasized that there is no rule that whenever the rights holder has granted a licence in the past, it is limited to an award of reasonable royalties. The question is whether the historical patterns of licensing establish that the plaintiff would have granted a licence to the defendant on the established terms if it had been approached at the time of the infringement. A pattern of granting licences is good evidence that the rights holder would have granted a licence if the defendant had approached it; an occasional grant of a licence in special circumstances is not.

Note also that a normal rate can only be taken as evidence of the rate the plaintiff would have agreed to if the defendant's use fell within the normal terms of the licence. When the defendant's use would have been a breach of standard licence terms, it is unreasonable to suppose that the plaintiff would have agreed to license such a use at the standard rate.[84]

Licences negotiated to settle litigation have been held by the House of Lords not to be indicative of the "going rate"[85] because such rates are not embracing of all the dynamics that would have been at play at the time of the infringement. An example

of this occurred in the case of *Consolboard v. MacMillan Bloedel*.[86] The court had evidence of three alternative, negotiated royalties. The first licence was negotiated with the former employer of the inventor, who had a strong claim to "shop rights" in the invention, while the third amount was negotiated partly to avoid litigation over the validity of the patents in question.[87] In both cases, the negotiated rates would have reflected these particular circumstances, and the court rejected these royalties as not reflecting an agreement between a willing licensee and licensor bargaining on equal terms. This was upheld by the Federal Court of Appeal, which adopted the statement of Lord Wilberforce in *General Tire*:

> These are very useful guidelines, but the principle of them must not be misapplied. Before a going rate of royalty can be taken as the basis on which an infringer should be held liable, it must be shown that the circumstances in which the going rate was paid are the same or at least comparable with those in which the patentee and the infringer are assumed to strike their bargain.[88]

3.2 The Hypothetical Negotiated Licence

If the evidence does not establish a historical rate that would have applied, then damages will be based on the reasonable royalty. It is often appropriate to calculate a reasonable royalty as the rate that would have been agreed to by the parties if they had negotiated a licence at the time of the breach.[89] This is also the approach taken in the United States.[90] Extrapolating from the definition of fair market value, a fair market royalty might be defined as the highest royalty in an open unrestricted market between informed and prudent parties acting at arm's length under no compulsion to license, expressed in terms of money or money's worth. The fair market royalty could be expressed as a rate as well, provided that the base against which it is applied is clear.

The notional date at which the royalty rate would be struck is the date of the first infringement. This can be very important in the licensing of risky technology, because the licensee will usually obtain favourable terms for bearing substantial risk.[91]

A "hypothetical negotiation" is not thought of as occurring between parties in isolation. Instead, it is presumed to take place in an open and unrestricted market where all prospective licensees will notionally participate. The presence of non-infringing alternatives to the use of the intellectual property must be considered and will tend to put a ceiling on the amount that a licensee would be willing to pay for the intellectual property.[92] Balancing the licensee's ceiling is the licensor's floor. That floor would notionally be established by considering all the avenues of exploitation reasonably available to the licensor, having regard for the licensor's then operating realities.

Suppose, for example, that a licensor is faced with two potential licensees in the same market—one is a large, efficient corporation and the other is small and inefficient. Assume that the first licensee is thus able to generate larger excess profits through use of the intellectual property than the second potential licensee. If both

potential licensees are equally able to enter relevant markets, the more efficient firm will be a more attractive licensee than the less efficient firm, and the royalty negotiated with the efficient licensee will likely be higher than that which would be negotiated with the inefficient licensee in isolation. Although the less efficient firm may well be able to negotiate a licence fee from the rights holder, the royalty it ought to pay will be increased by the presence of the more efficient firm as an alternative in the licensing market.[93] As Referee Duclos stated in *J.R. Short Milling Co.*:

> It is true that royalty is a matter generally spoken of by the Court and text books as that proportion of profits which the market will stand.[94]

Similarly, Lord Wilberforce in *General Tire* overturned a royalty rate analysis that discounted the effect of the market. He stated:

> My Lords, this passage is, in my opinion, unsupportable in law or in fact. In law it rests upon the hypothesis that what has to be considered, in measuring the loss a patentee sustains through an infringement, is some bargain struck between some abstract licensor and some abstract licensee uncontaminated by the qualities of the actual actors. But this is not so. The "willing licensor" and "willing licensee" to which reference is often made (and I do not object so long as we do not import analogies from other fields) is always the actual licensor and the actual licensee who, one assumes, are each willing to negotiate with each other—they bargain as they are, with their strengths and weaknesses, in the market as it exists. It is one thing (and legitimate) to say of a particular bargain that it was not comparable or made in comparable circumstances with the bargain which the court is endeavouring to assume, so as, for example, to reject as comparable a bargain made in settlement of litigation. It is quite another thing to reject matters (other than any doubt as to the validity of the patent itself) of which either side, or both sides, would necessarily and relevantly take into account when seeking agreement.[95]

There is no sharp distinction between this hypothetical negotiation approach to determining the lost royalty and the historical licence approach. The task is always for the court or referee to determine the bargain that would most likely have been agreed to and the difference is in the evidence relevant to establishing the royalty. When it can be established that the plaintiff habitually granted licences at a normal rate, then this normal rate is the best evidence of the rate that the plaintiff would have agreed to, and there is no need to inquire as to idiosyncratic aspects of the business position of the two parties. When a normal rate cannot be established, then more detailed evidence is required to establish the outcome of the negotiation that would have taken place but for the infringement. Licence terms historically agreed to by the plaintiff may be relevant even if the circumstances are sufficiently different that they cannot be taken as establishing a normal royalty.[96] The difference is simply in the weight attributable to historical licensing practices.

A list of general factors that may be considered in determining the hypothetically negotiated royalty was given by the court in the U.S. case of *Georgia-Pacific Corp. v. United States Plywood Corp.*:[97]

1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.

2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.

3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.

4. The licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.

5. The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter.

6. The effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales.

7. The duration of the patent and the term of the license.

8. The established profitability of the product made under the patent; its commercial success; and its current popularity.

9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.

10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.

11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.

12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

14. The opinion testimony of qualified experts.

15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee- who desired, as a business proposition, to

> obtain a license to manufacture and sell a particular article embodying the patented invention- would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.

This list of general factors emphasizes a reliance on profits and precedent to set a royalty. Notably, the hypothetical negotiation between a licensor and licensee is identified as only one of many factors to consider. Some U.S. courts have placed less emphasis on comparable licences, and more emphasis on the expected profits from the licence and the marketplace as a whole.[99]

Lord Wilberforce in *General Tire* has provided a similar description of the relevant evidence:

> This evidence may consist of the practice, as regards royalty, in the relevant trade or in analogous trades; perhaps of expert opinion expressed in publications or in the witness box; possibly of the profitability of the invention; and any other factor on which the judge can decide the measure of loss. Since evidence of this kind is in its general nature general and also probably hypothetical, it is unlikely to be of relevance, or if relevant, of weight in the face of [evidence of normally granted licences]. But there is no rule of law which prevents the court, even when it has the evidence of licensing practice, from taking these more general considerations into account. The ultimate process is one of judicial estimation of the available indications. …
>
> [Quotes Fletcher Moulton L.J. in *Meters*.[100]]
>
> A proper application of this passage, taken in its entirety, requires the judge assessing damages to take into account any licenses actually granted and the rates of royalty fixed by them, to estimate their relevance and comparability, to apply them so far as he can to the bargain hypothetically to be made between the patentee and the infringer, and to the extent to which they do not provide a figure on which the damage can be measured, to consider any other evidence, according to its relevance and weight upon which he can fix a rate of royalty which would have been agreed.[101]

3.3 Reasonable Royalties on a Cost Basis

A common method for determining the value of assets is the cost, or replacement cost, approach, which values the asset by assessing how much it would cost to reproduce the future benefits from the asset. For intellectual property, however, this approach is generally inappropriate for two main reasons. First, the direct and indirect development costs expended to produce intellectual property are very difficult to define and equally difficult to track—for example, when a particular invention was preceded by a long and expensive string of failures. More fundamentally, the development cost of intellectual property is often unrelated to the value. The costs might be disproportionately large[102] compared with the property's future economic return, or disproportionately small: "The elephant may have labored long and brought forth a mouse—and it is only a mouse that is on the table."[103]

3.4 Industry-Standard Rates

An indication of reasonable royalties may be found by examining comparable licences within a given industry. Because it is unlikely that an exactly comparable licence can be found, this approach requires the evaluator to adjust for the exact context of the hypothetical licence. Adjustments include, but are not limited to,

- macroeconomic factors that underlie the negotiations, including investment marketplace, size and growth of the target marketplace for products incorporating the intellectual property, technology trends, and competitive factors;
- industry-specific complexities;
- industry-standard royalty rates on licences between arm's-length parties (such rates reflect average conditions for an industry but may not be appropriate to the particular case; for example, industry standards would reflect rates applicable to both emerging and untested technologies as well as well-established ones; clearly, in litigation matters the average is a very crude measure of what would be appropriate to the specific facts at trial); and
- industry-standard royalty rates on licences between non-arm's-length parties.

With regard to this last point, Goldscheider writes:

> For example, it is a widely accepted practice in the agricultural chemical industry for important discoveries rarely to be licensed to third parties. Instead, they are kept within the family, and are usually only handled by affiliated companies. The only technology in this industry which is licensed to third parties is that which is of lesser significance and commercial interest. Therefore, if negotiated royalties were to be tabulated and averaged in the agricultural chemical business, the results would be unrealistically low. … It is believed that the same considerations hold true for many industries.[104]

The fundamental criticism of comparison to existing licences is that the approach ignores the actual profitability of the intellectual properties and companies in question. Nevertheless, industry-standard rates quite often are similar to royalty rates found through financially based methods, and can often form a valuable standard for review.[105]

3.5 The Sharing of Future Profits

It is generally only possible to strike a reasonable royalty rate by estimating the profits that would be expected to be generated through the use of the intellectual property by the hypothetical licensee and, equally, with full knowledge of the economic opportunity cost and strategic options available to the rights holder. How could a rate be determined as reasonable without knowing both of these vital factors? It is only possible to avoid such comprehensive analysis if the actual market for the licence is so deep as to produce a meaningful number of relevant comparables.

There are numerous methods to decide how to divide the profit flow between licensee and licensor, and in this article we will examine three: the 25 percent royalty rule, a return-on-investment approach, and the analytical method.

3.5.1 The 25 Percent Royalty Rule

A powerful, insightful, and commonly used framework for thinking about the split of estimated profits between the hypothetical licensee and licensor is the "25 percent royalty rule." This rule seeks to split the profits in a fair manner so that each party could expect to benefit from the relationship proportionately to its investment and level of risk. In a "normal" technology licensing relationship, the licensee bears the risks of investment in manufacturing and commercialization of the technology and the risks of competition from the marketplace, while the licensor provides a strong technology package. The 25 percent royalty rule recognizes as a benchmark that the licensor should be entitled to 25 percent of the predicted "profits."[106] However, this 25 percent rule is only a starting point: the profit split should then be adjusted up or down to reflect the exact circumstances of the licence, and it is not unreasonable for the ratio to be reversed.

The assumption that the licensee should be entitled to 75 percent of the pre-tax profits is based on the fact that the licensee is taking on a large risk element. The greater or lesser the risks undertaken by the licensee, the higher or lower the licensee's proportion of the pre-tax profit. In particular, if exploiting the licence requires an investment by the licensee in complementary assets (such as manufacturing and distribution capability), the risk to the licensee is correspondingly higher than it would be if the licensee is able to use pre-existing assets. Risk is also a function of the alternative opportunities available. If the licensee can deploy the necessary new investment to another opportunity with a greater certainty of return, then it may be unwilling to commit to the licence opportunity without receiving a more generous share of the profits. Some of these considerations are listed in figure 2.

The baseline allocation of 25 percent of profits to the licensor assumes that the licensor has a strong technology bundle to offer to the licensee. The following factors have been identified as contributing to a strong technology package:[107]

1. relevant, assumable, and enforceable patents;
2. trade secrets and know-how that are related to the subject technology;
3. ancillary trade secrets and know-how, including marketing insights and contacts;
4. one or more established product trade-marks, house marks, or logos that could promptly contribute credibility and goodwill to the licensee;
5. software programs, advertising support, and other expressions of creative work, whether or not protected by copyright;

Figure 2 Factors That Will Affect Licensee's Desired Profit Share

- Emphasis: the assumption of *risk*

Increase share

1. Unusually high or unusually risky investment in new assets by the licensee
2. The extent that the licensee's strengths duplicate the licensor's strengths
3. Alternative uses of the licensee's assets offering a superior profit/risk combination
4. Weak technology package offered by the licensor

Decrease share

1. Alternative licensees offering the licensor a superior profit/risk combination
2. If the licensee will be utilizing otherwise unprofitable existing assets or assets with excess capacity
3. If the licensor will provide assets typically provided by the licensee—that is,
   - manufacturing capabilities
   - marketing force

6. an active, well-financed, and historically productive R&D facility that could reinforce the licensed technology on a regular basis;
7. a pattern of successful licences between the licensor and similar or current licensees;
8. a reputation for diligence in pursuing infringers of its rights; and
9. a reputation for protecting its licensees from independent actions initiated by third parties.

Finally, the eventual split will be affected by the comparative strengths of the parties and their position in the marketplace as a whole. If the licensee already possesses established strengths in areas where the licensor is also strong, these strengths tend to offset each other and thus diminish the licensor's bargaining strength. However, if the licensor has numerous strong alternatives for exploitation of the intellectual property, including the possibility of exploiting the technology in-house, the licensor's bargaining position is correspondingly strengthened.

When presenting these factors as evidence in court, it may be persuasive to translate them into the 15 factors relevant for the determination of the reasonable

royalty listed in the *Georgia-Pacific* case (in section 3.2 above). These factors are only guidelines for ensuring that all relevant business and legal considerations are taken into account.

This approach relies heavily on the qualitative ability of an expert to appropriately adjust the return up or down to reflect the individual circumstances of the case at hand. As such, it leaves the judge in the position of relying on his or her assessment of the credibility of conflicting expert witnesses. For example, in *Allied Signal*,[108] Heald D.J. accepted and applied a variation of the 25 percent royalty rule as suggested by the defendant's expert:

> [The defendant's expert] testified that in the technology industry generally, a reasonable royalty for patented technology would be approximately 25 % to 33.3 % of profit before tax. [The expert] then detailed a number of factors that would affect the specific percentage in each case:
>
> (i) *Transfer of technology:* There would have been no need to transfer technology, so the rate should be reduced.
>
> (ii) *Differences in the practice of the invention:* The plaintiff and the defendant have two different processes to create their products. The defendant brings its own technology to the product development. This factor would reduce the royalty rate.
>
> (iii) *Non-exclusive licence:* The defendant is not being given an exclusive license. It is not given total control over the market. This factor would tend to reduce the royalty rate.
>
> (iv) *Territorial limitations:* The patent is limited to the manufacture of the product within Canada. This factor would reduce the royalty rate.
>
> (v) *Term of the license:* The license is only for six years of infringement, not for the entire term of the patent. This factor would reduce the royalty rate.
>
> (vi) *Competitive technology:* The availability of competing technologies, such as polyethylene and coextruded film, would reduce the royalty rate.
>
> (vii) *Competition between licensor and licensee:* The fact that the plaintiff and the defendant would be competing against each other would increase the royalty rate.
>
> (viii) *Demand for the product:* Demand for nylon film was growing. This factor would increase the royalty rate.
>
> (ix) *Risk:* The risk that the product would not sell is very low. This factor would tend to increase the royalty rate.
>
> (x) *Novelty of invention:* The practice of using nylon films as a barrier to gas transmission has been commercially exploited for decades, and this invention is not the result of extensive laboratory studies. This would reduce the royalty rate.

(xi) *Compensation for research and development costs:* Such costs for this product are quite low. This factor would reduce the royalty rate.

(xii) *Displacement of business:* A royalty rate will tend to be higher if it results in increased revenues to the licensee. [The expert] suggests that it would not increase revenues to the defendant, but would simply "maintain existing business."

(xiii) *Capacity to meet market demand:* The royalty rate will be reduced if the patentee does not have the capacity to produce enough of the product to satisfy the market.

These 13 factors were also used in the *Jay-Lor* case.[109]

Applications of the 25 percent royalty rule have been criticized. The criticisms are more rightly levied against a strict application of a rule of 25 percent than against the paradigm or methodology described above. The criticisms include:

- the rule ignores precise profits generated by the intellectual property;
- the rule might ignore a variety of costs, including advertising, distribution,[110] and the costs of complementary assets;
- by its very name, a court or other user of the rule might become attached to the 25/75 split, and may not appreciate that it is only a starting point or a paradigm for analysis;[111] and
- the rule does not specifically analyze whether the 25 percent rate would provide an adequate return to the rights holder or leave the defendant with appropriate profits.

These criticisms raise bona fide issues that need to be explored. They lead to support for a more comprehensive analysis that analyzes the return on investment of both the rights holder and the licensee. The primary focus of such an approach is the determination of the maximum royalty rate that will leave the hypothetical licensor with the minimum acceptable investment rate of return on its overall company assets—perhaps the most pertinent factor that drives a reasonable royalty rate.

3.5.2 The Analytical Approach

The analytical approach is premised on the proposition that in a negotiation between willing parties, a reasonable royalty will be such as to leave the hypothetical licencee/infringer with a profit. On this premise, the reasonable royalty can be estimated by taking the profit earned by the infringer and subtracting a "normal" profit margin, which would likely have been realized by the infringer if it had sold similar products without infringing the intellectual property. The difference between the two is the "super-profit" attributed to the use of the infringing intellectual property and is awarded to the rights holder as a reasonable royalty.[112]

This approach tries to split the profits between the plaintiff and the defendant while allowing the defendant to keep a normal level of profits. The practical problem is the determination of what a "normal" profit margin is. The approach must balance the margin that is normal to the plaintiff and that of the industry in question. It can be difficult to define precisely in what industry or market the infringement is taking place. Even within an industry, there is a wide discrepancy in profit margins, often by almost an order of magnitude. Furthermore, large companies with many product lines may well have large differences in profitability between individual products that relate only in the aggregate to the overall profitability of the company. The logic of the analytical approach suggests that the court will need to apply the normal profitability of the individual product line, and not the profitability of the company. The degree of fixed costs to be absorbed is subject to all the usual arguments.

The reason the plaintiff's normal profit margin is not determinative is that the analytical approach seeks a reasonable royalty rate in the eyes of the whole notional target (or "buyer") industry—not just the rate that would be appropriate from the perspective of the plaintiff (or "seller"). This analytical approach has three potential pitfalls:

1. It ignores the cost or contribution of all other complementary assets unique to the business of the infringer.
2. It leads to erroneous results when the "normal" profits include the use of other intellectual properties. For example, suppose a company is found liable for infringing the trade-mark of a well-known soft drink. Finding the "normal" level of profit by looking at the profits of Coca-Cola, Pepsi, and Cadbury Schweppes would be unfair to the plaintiff, because these companies all have established trade-marks themselves. If the profits of other intellectual properties are used to find a normal profit level, the calculation will in effect assume that the infringing company, in the absence of the infringement, would have had legal access to a valuable trade-mark for its products.[113]
3. It ignores the alternative licensees available in the marketplace. The analytical approach takes as its baseline the profits made by the infringing company. However, if the licensing company had more lucrative options in the marketplace to exploit the intellectual property than hypothetically licensing the defendant, the award should restore the plaintiff to that higher level. The analytical method thus has the added danger of undercompensating the rights holder. Commonwealth case law has a greater focus on the market than is implied by a narrow "hypothetical negotiation" test. All the opportunities for licensing to other companies should be evaluated in determining the reasonable royalty.

The analytical method is different from the investment return method (discussed below). It is less comprehensive and, because it focuses on historical costs, does not directly take into account market values. However, when comprehensively computed, a "normal profit margin" begins to look like economic profit and that, in turn, begins to move toward the result produced by investment return analysis.

3.5.3 Investment Return Analysis: The Economic Return from Intellectual Property[114]

A final alternative approach to estimating a reasonable royalty is investment return analysis. This is conceptually similar to the analytic approach in that it determines a normal return to the defendant's non-infringing assets and uses this to calculate an excess return that is attributed to the use of the infringing intellectual property. This excess return is available to pay the reasonable royalty. Investment return analysis is more sophisticated than the analytic method because instead of simply estimating a general "normal" profit, it focuses on the specific assets and financial structure of the infringer in order to determine what a likely return would have been for the particular defendant. Thus the investment return analysis is more sensitive to the defendant's specific context than is the analytic approach.

A commonly accepted standard for a company's minimum return on assets invested is the weighted average cost of capital (WACC). The WACC is the return needed to service the economic capital required by the firm. It is sufficient to service the notional debt and provide a fair rate of return on invested equity. WACC is objectively determinable and is independent of the actual debt and equity of a particular firm, instead depending on the optimal capital structure of the particular firm. The optimal capital structure is a function of a broad diversity of market and industry factors as well as considerations unique to the firm such as culture, management, and other company-specific risks.

After determining the overall WACC and values of various categories assets including the (infringing) intellectual property, acceptable rates of return are determined for each category of assets. By applying the known required rates of return on other classes of assets (such as working capital or fixed assets), the rate of return on the intellectual property required to achieve the overall WACC can be calculated. Once this return on the intellectual property is known, the company's pre-debt net income after tax is used to determine the maximum amount the hypothetical licensee could pay and still generate an investment return on the assets it gives to the hypothetical licensing relationship. This amount can then be translated into a royalty, if desired.

In principle an investment return approach can produce a highly defensible assessment of the range of royalties that would be acceptable to a hypothetical licensee in a licensing negotiation, though to date it has not to our knowledge been applied in reported cases.[115] The method is described at some length in the 2001 version of this article and in the longer version of the present article available from the Cole and Partners website, and we refer the interested reader to those sources for more detail.

3.6 The Royalty Base

A factor that has not received great attention in the Canadian case law is the definition of the royalty base, the amount on which the reasonable royalty is to be ap-

plied. Generally, the base is sales. However, it may be difficult for the licensor to verify the actual level of use of the technology by the licensee, or the technology may also create irregular but significant convoyed sales. In such cases, the licensor may prefer that the royalty be at least partially based on verifiable sales of products that do not incorporate the licensed technology.

It is questionable whether a court would be willing to entertain such an argument if it would result in significant differences in the size of the damages award. However, there may be cases where the court has greater confidence in the proof offered of the size of one royalty base compared with another as a basis for the damages calculation.

3.7 Reasonable Royalty as a Default

As noted above, there are some cases in which the defendant had clearly infringed the plaintiff's right, and yet on the facts the plaintiff cannot prove either that it would have made the defendant's infringing sales or that it would have negotiated a licence. Put loosely, the defendant's use "has not hurt" the plaintiff.

In such cases the plaintiff is entitled to a reasonable royalty, ultimately for the pragmatic reason that, "[o]therwise, that property which consists in the monopoly of the patented articles granted to the patentee has been invaded, and indeed abstracted, and the law, when appealed to would be standing by and allowing the invader or abstractor to go free."[116]

Although the rule is clear, there is some dispute as to whether this result is based on principles that are compensatory or restitutionary.[117] The argument for the restitutionary view is that the award cannot be compensatory because the plaintiff did not lose sales and would not have licensed. The counter-argument is that the plaintiff would have been entitled to demand that the defendant license the invention or face an injunction to stop its production, and therefore what it lost was "the opportunity to sell to the defendant the right to use the plaintiff's property."[118]

In any event, the issue is rarely raised and from a practical point of view unimportant, because a hypothetical royalty as discussed above will usually fall in a range satisfactory under either the compensatory or the restitutionary approach.

3.8 (Non-)Confiscatory Royalties

An alternative to traditional damages and accounting of profits awards arose in *Unilever PLC v. Procter & Gamble*, where Muldoon J. sought to reconcile an avoidance of the difficulties of an accounting of profits with the reluctance of plaintiffs to reveal sensitive information to prove their damages by awarding damages "calculated upon a generous, but non-confiscatory, rate of royalty."[119]

While an interesting point for discussion, this approach has not been followed in other cases. A detailed discussion on this topic is beyond the scope of this abridged paper.

4.0 MISCELLANEOUS ISSUES

4.1 Income Taxes

Generally, an award of damages in intellectual property will be taxable to the recipient as normal business income. However, it may happen that the nature of the award makes it a capital receipt and, hence, the amount will be subject to capital gains.

Typically, profits earned by the infringer have been taxed as normal business profits and payment of the damages award will be deductible. As a practical matter, we suspect punitive damages are also regularly deducted from and included in taxable income, respectively, by the defendant and the plaintiff. However, there is academic thinking to the contrary.[120]

Consequently, damages are generally computed on a "pre-tax" basis and are not reduced for income taxes. However, in the computation of "pre-tax" amounts, often income taxes must be considered. For example, in the computation of lost profit on profit or on surplus funds, income taxes reduce income forming the investment base. Only after-tax profits are available for reinvestment.

4.2 Transfer Pricing

Transfer prices are the prices at which related parties trade goods and services, including intellectual properties, across international borders. When related companies transact, it is possible for them to manipulate the licences or prices they charge each other to shift profits to the company in the lower-tax jurisdiction. In response, the Canada Revenue Agency requires that:[121]

> for tax purposes, the terms and conditions agreed to between non-arm's length parties in their commercial or financial relations be those that one would have expected had the parties been dealing with each other at arm's length.[122]

The "arm's-length" principle for tax purposes is similar to the courts' definition of the reasonable royalty, reflecting the terms and conditions of a hypothetical negotiation between arm's-length parties. Many tax authorities, including the Canada Revenue Agency (CRA) and the Internal Revenue Service (IRS), require companies to submit and maintain documentation supporting their claimed royalties used in the tax treatment of intercompany transfers of intellectual property.

Although such evidence has not yet appeared in the Canadian case law, such documented assessments and reports could become crucial evidence in intellectual property litigation, particularly in cases involving Canadian subsidiaries of foreign corporations.

4.3 Pre-Grant Damages

Under s. 55(2) of the *Patent Act*,[123] a patentee is eligible for "reasonable compensation" for any damage sustained between the date the application is laid open and the date of the grant of the patent for any activities that would have infringed the patent

had it been in force. In *Jay-Lor International v. Penta Farm Systems*, Snider J. ruled that "reasonable compensation" is not full damages, and on the arguments before her was a reasonable royalty, the royalty being determined as in a normal damages assessment.[124] Interestingly, Snider J. noted that there may be other methods to determine reasonable compensation, although none was presented to her.

5.0 CONCLUSION

The determination of damages in a patent case, or indeed any intellectual property case, can be difficult, particularly if the matter is hotly contested between two parties willing to commit considerable resources to litigation. The assessment involves the argument of hypotheticals, and damages arguments can involve complex market and economic analysis not dissimilar to a competition law analysis.

Owing to the recent run of patent cases in which accountings of profits were awarded, the complete range of damages considerations has not been fully canvassed in modern Canadian intellectual property law. However, cases may well arise in the future that will raise a number of difficult points. It should be remembered that in assessing damages the courts are usually applying Lord Shaw's "broad axe" in attempting to reach a correct decision, but they are not necessarily concerned with perfection. In assisting the courts in this task, participants might be guided by the essential business economics underlying damages calculations, and the even older advice to "keep it simple."

ENDNOTES

[1] "Damages" can be used as a generic term that refers to both an accounting of profits and compensatory damages. For the sake of clarity, this article will strive to use "damages" only in reference to compensatory damages.

[2] A.J. Stack, A.S. Davidson, and S.R. Cole, "Damages Calculations in Intellectual Property Cases in Canada" (2001), 18(1) *C.I.P.R.* 1.

[3] "Accounting of Profits Calculations in Intellectual Property Cases in Canada (2007)" (2008), 24(1) *C.I.P.R.* 83.

[4] *Gerber Garment Technology v. Lectra Systems Ltd.*, [1997] R.P.C. 443, at 452 (C.A.), per Staughton L.J.

[5] These are general tort principles. In the patent context, see Lord Wilberforce in *General Tire v. Firestone*, [1976] R.P.C. 197, at 212 (H.L.), citing *Pneumatic Tyre v. Puncture Proof Pneumatic Tyre* (1899), 16 R.P.C. 209, at 215 (C.A.): "There are two essential principles in valuing that claim: first, that the plaintiffs have the burden of proving their loss: second, that the defendants being wrongdoers, damages should be liberally assessed but that the object is to compensate the plaintiffs and not punish the defendants."

[6] The same "but for" test is also used in assessing patent damages in U.S. law: see *Rite-Hite Corp. v. Kelley Co.*, 56 F. 3d 1538, at 1545, 35 U.S.P.Q. 2d 1065 (Fed. Cir. 1995) (en banc).

[7] See *Cadbury Schweppes v. FBI Foods*, [1999] 1 S.C.R. 142, at para. 73.

[8] *Watson Laidlaw Co. Ltd. v. Pott, Cassells and Williamson* (1914), 31 R.P.C. 104, at 117-18 (H.L.). This reliance on a flexible assessment was also reflected by Lord Buckley in *Meters Ltd. v. Metropolitan Gas Meters Ltd.* (1911), 28 R.P.C. 157, at 166 (C.A.), who said: "the whole subject-matter

[of the calculation of damages] is one that is not capable of being mathematically ascertained by any exact figure." See also *Colonial Fastener Co. v. Lightning Fastener Co.*, [1937] S.C.R. 36, at 44: "The first problem is to determine whether the plaintiff would have made all these sales and even a cursory examination of the evidence would indicate that this is clearly a case where the broad axe referred to by Lord Shaw in *Watson v. Pott* should be applied."

[9] See *Cooper v. Hobart*, [2001] 3 S.C.R. 537, esp. at paras. 25-27, explaining that the remoteness analysis is essentially one of policy. While *Cooper* was a case of negligence, as noted earlier, intellectual property and particularly patent infringement is considered to be a species of tort, particularly with respect to principles of damages.

[10] As the Court of Appeal noted in *Gerber*, *supra* note 4, the foreseeability requirement is in principle a form of remoteness, but it is so well established that it is normally treated as an independent requirement rather than as a species of remoteness. Accordingly, for convenience we will use "remoteness" to mean remoteness issues other than foreseeability.

[11] John G. Fleming, *The Law of Torts*, 9th ed. (Sydney: Law Book Company, 1998), 240.

[12] However, remoteness may be a live issue with respect to more unusual damages claims: see the discussion below in section 2.5, "Losses of Subsidiary Companies."

[13] *Gerber Garment Technology v. Lectra Systems*, [1995] R.P.C. 383, at 400 (Pat. Ct.); largely aff'd. *supra* note 4 (C.A.).

[14] This is simply a statement of the general rule in the economic context. See also *Livingstone v. Rawyards Coal Co.* (1880), 5 A.C. 25, at 39, per Lord Blackburn, quoted by Heald D.J. in *Allied-Signal Inc. v. DuPont Canada* (1998), 78 C.P.R. (3d) 129, at 137-38 (F.C.T.D.—D.J.): "The general rule at any rate in relation to 'economic' torts is that the measure of damages is to be, so far as possible, that sum of money which will put the injured party in the same position as he would have been in if he had not sustained the wrong."

[15] If the patent is a process patent, the plaintiff will generally be able to claim damages for lost sales of products made by the machine: see *Colonial Fastener*, *supra* note 8, at 26-27.

[16] See *AlliedSignal*, *supra* note 14, at 139 and *Jay-Lor*, *infra* note 124, at paras. 220-221.

[17] In general tort law, see Major J.'s discussion in *Athey v. Leonati*, [1996] 3 S.C.R. 458, at paras. 31-32 (under the heading "Independent Intervening Events"). Major J. cites the House of Lords in *Jobling v. Associated Dairies Ltd.*, [1981] 2 All E.R. 752 (H.L.). In *Jobling*, a plaintiff had suffered a back injury as a result of the negligence of the defendant. Damages were reduced because an unrelated spinal disease that developed after the injury would have proved totally disabling within a few years. Thus, hindsight was used to determine that the plaintiff would have become disabled even but for the accident. (On the facts in *Athey*, where the plaintiff's back was negligently injured in two traffic accidents by the defendants, and the plaintiff subsequently suffered a herniated disc during recovery, the Supreme Court ruled that there was no applicable independent intervening event.)

[18] *AlliedSignal*, *supra* note 14, at 141.

[19] *United Horse-Shoe & Nail Co. v. Stewart & Co.* (1888), 5 R.P.C. 260, at 264, L.R. 13 App. Cas. 401 (H.L.); *Meters Ltd. v. Metropolitan Gas Meters Ltd.* (1910), 27 R.P.C. 721, at 731 (Ch. D.); aff'd. on this point, *supra* note 8.

[20] *Meters*, *ibid.*, at 731.

[21] *Catnic Components v. Hill & Smith*, [1983] F.S.R. 512, at 522 (Pat. Ct.) and *Hamilton Cosco v. Featherweight Aluminum* (1965), 47 C.P.R. 40 (Ex. Ct.—Registrar). In the latter case, it was found that the plaintiff, an American company, had an ineffective distributor in Canada (evidence was introduced that many large department stores in prominent cities had never heard of the distributor), so it would have only captured 20 percent of the defendant's sales, rather than 80 percent in the presence of a functioning distribution system.

[22] *Meters*, *supra* note 8, at 731; *Catnic*, *supra* note 21, at 522.

[23] *Domco Industries Ltd. v. Armstrong Cork Canada Ltd.* (1983), 76 C.P.R. (2d) 70, at 92 (F.C.T.D.—Prothonotary); var'd. (1986), 10 C.P.R. (3d) 53 (F.C.T.D.).

[24] *Domco*, *ibid.*, at 62 (F.C.T.D.).

[25] *Ibid.*, at 92 (F.C.T.D.—Prothonotary); *Catnic*, *supra* note 21, at 522.

[26] *Supra* note 14, at paras. 31-33.

[27] For example, the product was a special-purpose plastic film supplied in rolls, and the plaintiff's rolls sometimes unrolled prematurely: *ibid.*, at para. 61. See also the discussion of the GenCorp customer at paras. 85-92.

[28] See the discussion of the GenCorp customer, *ibid.*, at paras. 85-96.

[29] Alternatively, market surveys can be used to show that customers would buy the product if it were available to them.

[30] This point is discussed in M.B. Stewart, "Calculating Economic Damages in Intellectual Property Disputes: The Role of Market Definition" (April 1995), *J.P.T.O.S.* 321. Stewart writes (at 334): "Most antitrust issues cannot be analyzed in a meaningful way without consideration of the relevant market in which the act in question took place. Much the same can be said of damages in intellectual property disputes. Except for two polar cases—the 'garage inventor' for whom lost profits are not in issue and the wronged (patent-holding) manufacturer or seller who could reasonably have expected to make all of an infringer's sales—the plaintiff in a patent dispute cannot be made whole without an explicit consideration of the relevant market(s) in which the patented product and the infringing product competed for sales."

[31] This was the approach taken by Heald D.J. in *AlliedSignal*, *supra* note 14, where there were only nine infringing sales.

[32] See *Jay-Lor*, *infra* note 124, at para. 226.

[33] These approaches were discussed in "Accounting of Profits Calculations in Intellectual Property Cases in Canada (2007)," *supra* note 3. In differential costing, fixed costs are not deducted from revenues to determine profits; in absorption costing, some portion of fixed costs is deducted. Hence, the use of absorption costing decreases the quantum of profits.

[34] *Domco*, *supra* note 23, at 65 (F.C.T.D.).

[35] Quaere whether this is equivalent to mitigation. For a study of the differential profits argument in the accounting of profits context, see "Accounting of Profits Calculations in Intellectual Property Cases in Canada (2007)," *supra* note 3.

[36] *Panduit Corp. v. Stahlin Brothers Fibre Works, Inc.*, 575 F. 2d 1152, at 1156 (6th Cir. 1978).

[37] *Meters*, *supra* note 19, at 731, per Eve J.; aff'd. on this point, *supra* note 8.

[38] *Catnic*, *supra* note 21, at 522, per Falconer J.

[39] *United Horse-Shoe*, *supra* note 19.

[40] *Domco*, *supra* note 23 (F.C.T.D.).

[41] See *Jay-Lor*, *infra* note 124, at para. 115.

[42] See *Domco*, *supra* note 23, at 61-62 (F.C.T.D.).

[43] *Supra* note 19.

[44] *Ibid.*, at 731.

[45] *Ibid.* This aspect of the decision was approved on appeal, although the English Court of Appeal expressed reservations about the plaintiff not receiving a royalty on the sales the plaintiff would not have captured. See *Meters*, *supra* note 8.

[46] *Monsanto Canada Inc. v. Schmeiser*, 2004 SCC 34, [2004] 1 S.C.R. 902, at para. 102 ("*Schmeiser*").

[47] *Cadbury Schweppes Inc. v. F.B.I. Foods Ltd.*, [1999] 1 S.C.R. 142.

[48] The plaintiff also sought a permanent injunction, which was denied by the Supreme Court.

[49] While the basis for the award was equitable compensation rather than damages, the court noted that potential doctrinal differences were not relevant: *supra* note 46, at para. 51.

[50] *Ibid.*, at para. 64.

[51] *Ibid.*

[52] Specifically, the plaintiff's patent covered genes that conferred herbicide resistance on the adult plant.

[53] *Monsanto Canada v. Schmeiser* (2001), 12 C.P.R. (4th) 204, at para. 121 (F.C.T.D.); (2002), 21 C.P.R. (4th) 1, at para. 78 (F.C.A.).

[54] See *Colonial Fastener*, *supra* note 8, and *American Braided Wire Co. v. Thomson & Co.* (1890), 7 R.P.C. 152 (C.A.).

[55] Indeed, price reduction may be seen as a form of mitigation, since the rights holder will want to respond in a way that will minimize its losses; it would be perverse to require the plaintiff to incur extraordinary losses by maintaining an uncompetitive price in the face of infringing competition in order to preserve its damages claim.

[56] See *United Horse-Shoe*, *supra* note 19.

[57] *Colonial Fastener*, *supra* note 8, at 30.

[58] For example, in *Colonial Fastener*, *supra* note 8, the Supreme Court rejected a claim for losses from a price reduction that the plaintiff asserted was made because its sales representatives had been told, apparently falsely, by prospective or actual customers that they would otherwise purchase more cheaply from the defendants. The court held that these losses were too remote (*ibid.*, at 47). However, the court's treatment of the issue was cursory, and it may have been that the court was simply not satisfied on the facts that the price reduction had been induced by the threat of infringing competition, rather than by the threat of general competition.

[59] *AlliedSignal*, *supra* note 14, at 181.

[60] *Omega Africa Plastics Pty. Ltd. v. Swisstool Mfg. Co. (pty.)*, [1978] 3 S.A. 465, at 475 (App. Div.), as quoted in *AlliedSignal*, *ibid.*, at 201.

[61] See *Minnesota Mining and Manufacturing v. Johnson & Johnson Orthopaedics*, 976 F. 2d 1559; 24 U.S.P.Q. 2d 1321 (Fed. Cir. 1992), and *In re Mahurkar Patent Litigation*, 831 F. Supp. 1354, 28 U.S.P.Q. 2d 1801 (N.D. Ill. 1993); aff'd. 71 F. 3d 1573, 37 U.S.P.Q. 2d 1138 (Fed. Cir. 1995). Compensable price reductions include reductions on the announcement of the introduction of a competing product: see *Brooktree v. Advanced Micro Devices Inc.*, 977 F. 2d 1555, at 1578-81, 24 U.S.P.Q. 2d 1401, at 1417-19 (Fed. Cir. 1992).

[62] See *American Braided Wire Co.*, *supra* note 54.

[63] *Colonial Fastener*, *supra* note 8.

[64] *Domco*, *supra* note 23, at 94 (F.C.T.D.—Prothonotary). Prothonotary Preston was adopting statements from the affidavit of an expert witness, which are reproduced here.

[65] The classic example is ink-jet printers, where printers are sold at reduced prices in the expectation of substantial profits on the sale of ink-jet cartridges.

[66] *Supra* note 13.

[67] See *Catnic*, *supra* note 21, at 537.

[68] *Supra* note 13, at 402. Similarly, in the United States, a majority of the U.S. Court of Appeals for the Federal Circuit stated in *Rite-Hite v. Kelley*, *supra* note 6, at 1546 (F. 3d): "If a particular injury was or should have been reasonably forseeable by an infringing competitor in the relevant market, broadly defined, that injury is generally compensable absent a persuasive reason to the contrary." See also *King Instruments v. Perego*, 65 F. 3d 941, 36 U.S.P.Q. 2d 1129 (Fed. Cir. 1995); cert. denied, 116 S. Ct. 1675 (1996); *Kaufman Co. v. Lantech Inc.*, 926 F. 2d 1136 (Fed. Cir. 1991); and *Ristvedt-Johnson Inc. v. Brandt Inc.*, 805 F. Supp. 557 (N.D. Ill. 1992), which discusses the "entire market value rule."

[69] *Supra* note 4. The lead decision on this point was that of Staughton L.J., with Hobhouse and Hutchison L.JJ. concurring. Testimony by a Lectra employee at trial provided a vivid illustration of the business realities underlying this head of damages: see *supra* note 13, at 403-4.

[70] See *Jay-Lor*, *infra* note 124, at para. 198.

[71] *Supra* note 4, at 396; and see the evidence of a Lectra employee quoted by Jacob J. at 404.

[72] See *Bic Leisure Products v. Windsurfing International*, 687 F. Supp. 134 (S.D.N.Y. 1988) and *Amsted Industries v. National Castings*, 16 U.S.P.Q. 2d 1737 (N.D. Ill. 1990).

[73] See *Baker Hughes Inc. v. Galvanic Analytical Systems* (1991), 37 C.P.R. (3d) 512 (F.C.T.D.); *Wellcome Foundation v. Interpharm* (1992), 41 C.P.R. (3d) 215 (F.C.T.D.); and *Whirlpool Corp. v. Camco* (1995), 65 C.P.R. (3d) 63 (F.C.T.D.).

[74] *Gerber*, *supra* note 4, at 456, 478, and 481.

[75] *Ibid.*, at 457. Staughton L.J. did hold that the effect of taxes was not adequately addressed by Jacob J., and would have remitted this issue to Jacob J. for further consideration.

[76] *Mars Inc. v. Coin Acceptors Inc.*, 527 F. 3d 1359, 2008 WL 2229783, 2008 U.S. App. LEXIS 11707 (Fed. Cir. 2008).

[77] *Domco*, *supra* note 23, at 69 (F.C.T.D.).

[78] For a general discussion of future or post-trial damages, see *Athey*, *supra* note 17, at paras. 26-30.

[79] *AlliedSignal*, *supra* note 14, at 176, and *A.G. für Autogene Aluminium Schweissung v. London Aluminium Co. (No. 2)* (1923), 40 R.P.C. 107, at 113 (Ch. D.). Similarly, in *Colonial Fastener Co. v. Lightning Fastener Co.*, [1936] 2 D.L.R. 194, at 205 (Ex. Ct.—Referee), Referee Duclos said: "I find that as to such sales the defendants are liable to pay a fair royalty, that is, they must pay the plaintiff what it would have cost them to make these sales lawfully." This decision was upheld upon appeal to the Supreme Court of Canada, *supra* note 8.

[80] *Catnic*, *supra* note 21, at 530. See also Sargent J. in *Autogene Aluminium Schweissung*, *supra* note 79, at 113, and similarly, in the United States, *Horvath v. McCord Radiator & Manufacturing Co.*, 100 F. 2d 295, at 335-36 (2d Cir. 1971) setting out a "willing licensor-willing licensee" approach to determining reasonable royalties.

[81] See, e.g., *Monsanto Co. v. Ralph*, 382 F. 3d 1374, at 1384 (Fed. Cir. 2004); *Del Mar Avionics, Inc. v. Quinton Instrument Co.*, 836 F. 2d 1320, at 1328 (Fed. Cir. 1987); and *Rite-Hite Corp. v. Kelley Co.*, *supra* note 6, at 1554 n. 13 (F. 3d).

[82] See, e.g., *Monsanto Co. v . Ralph*, *ibid.*

[83] *Meters*, *supra* note 8, at 164; for the fact pattern in the trial decision, see the description associated with note 19. Fletcher Moulton L.J. and the Court of Appeal disapproved of the trial judge's failure to award a reasonable royalty for infringing sales that the plaintiff would not have captured, but did not disturb the trial decision because they were reviewing on a "jury standard," not correctness. The quotation is part of a section discussing the award of reasonable royalties. See also *Penn v. Jack* (1866), 14 L.T. N.S. 495; (1867), LR 5 Eq. 81.

[84] See *Monsanto Co. v. McFarling*, 2007 U.S. App. LEXIS 12099 (Fed. Cir. 2007); *Monsanto Co. v. Ralph*, *supra* note 81.

[85] *General Tire*, *supra* note 5, at 219-20.

[86] *Consolboard v. MacMillan Bloedel* (1982), 63 C.P.R. (2d) 1 (F.C.T.D.); aff'd. (1983), 74 C.P.R. (2d) 199 (F.C.A.).

[87] Shop rights in the United States exist when an employee who is not employed for the purpose of invention invents and develops an invention, which the plant puts into use as part of the development process. In such cases, the plant has a "shop right" to continue using the invention without payment to the patent holder, but cannot sell the patented item or build copies. Note, however, that the court eventually found that the specific royalty owed by this defendant was limited to 0.5 percent by a secondary contract. *Ibid.*, at 29 (F.C.T.D.).

[88] *Ibid.*, at 210 (F.C.A.), quoting *General Tire*, *supra* note 5, at 213.

[89] *AlliedSignal*, *supra* note 14, at 176; *Catnic*, *supra* note 21, at 530, per Falconer J.: "where there is no established market rate the assessment must be on the basis of what royalty a willing licensee would have been prepared to pay and a willing licensor to accept."

[90] For a good summary of U.S. law on this point, see *Applied Med. Res. Corp. v. United States Surgical Corp.*, 435 F. 3d 1356 (Fed. Cir. 2006).

[91] For example, in *Integra Lifesciences I Ltd. v. Merck KGaA*, 331 F. 3d 860 (Fed. Cir. 2003); rev'd. 545 U.S. 193, 125 S. Ct. 2372 (2005), the defendant conducted initial work on the plaintiff's pioneer technology while licensing negotiations were ongoing. Negotiations broke down and litigation ensued. The damages awarded at trial were relatively low because the hypothetical bargain was held to have taken place early in the process, before the defendant's work crossed the line from pure experiment to development. Because the technology was still very risky at that time, the court held that the plaintiff would have agreed to terms very favourable to the defendant. Indeed, it appears that in order to obtain a better hypothetical bargain, the plaintiff was arguing the experimental-use defence on behalf of the defendant in order to push the date of the hypothetical bargain downstream, when the technology had shown increased promise.

[92] See C. Shifley, "Alternatives to Patent Licenses: Real-World Considerations of Potential Licensees Are—and Should Be—a Part of the Courts' Determinations of Reasonable Royalty Patent Damages" (1993), 34(1-2) *IDEA* 1.

[93] U.S. law also reflects the state of the overall market. Donald S. Chisum, ed., *Chisum on Patents* (New York: Matthew Bender, 1978), §20.03[3], states: "The more recent decisions stress the limited utility of the willing buyer-settler rule." See *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970); mod'd. and aff'd. 496 F. 2d 295 (2d Cir. 1971); and *Panduit*, *supra* note 36.

[94] *J.R. Short Milling Co. v. Continental Soya Co.* (1942), 2 C.P.R. 158, at 169 (Ex. Ct.—Referee).

[95] *General Tire*, *supra* note 5, at 221.

[96] Of course, previous licensing arrangements are still valuable evidence in finding this hypothetical royalty. Chisum notes that in the United States, existing licences provide, as a practical matter, a floor beneath which the judicially ascertained reasonable royalty is unlikely to fall. Chisum, *supra* note 93, at §20.03

[97] *Supra* note 93, at 1120 (S.D.N.Y.).

[98] For example, in *SmithKline Diagnostics Inc. v. Helena Laboratories Corp.*, 926 F. 2d 1161, at 1168, 17 U.S.P.Q. 2d 1922, at 1928 (Fed. Cir. 1991), the reasonable royalty was increased because the patentee was an "unwilling licensor."

[99] In *Honeywell v. Minolta*, factor (12) was restated as "[w]hat the parties reasonably anticipated would be their profits or losses as a result of entering into a licensing agreement," and three new considerations were added: "The relative bargaining positions of [the plaintiff] and [the defendant] … The extent to which the infringement prevented [the plaintiff] from using or selling the invention … [and] The market to be tapped." See R. Goldscheider, *Technology Management: Law, Tactics, Forms* (New York: Clark Boardman Callaghan, 1984), §24.02. *Honeywell v. Minolta* (D.N.J. 28 January 1992, Civil nos. 87-4847, 88-1624) was settled: the details are from the jury instructions.

[100] *Supra* note 8, at 164.

[101] *General Tire*, *supra* note 5, at 214.

[102] For example, in the 1950s, the U.S. government spent approximately $100 million researching nuclear-powered aircraft, which were never able to develop enough thrust for takeoff. The future economic value of aircraft engine technology that fails to fly is presumably zero. See R.L. Parr, *Intellectual Property Infringement Damages: A Litigation Support Handbook* (Toronto: John Wiley, 1993), 173.

[103] Goldscheider, *supra* note 99, at §10.03.

[104] *Ibid.*, at §10.10.

[105] But see *Jay-Lor*, *infra* note 124, at para. 129 for a somewhat more critical view.

[106] It is sometimes suggested that the parties begin with an assumption that licences are typically in the 25 to 33 percent range. See W.M. Lee, "Determining Reasonable Royalty," in J. Simon and W. Friedlander, eds., *The Law and Business of Licensing* (New York: Clark Boardman Callaghan, 1996), 2061, at 2067, citing numerous earlier sources for this approach. Alternatively, the companies could begin with a typical split for their industry, or look to an investment-based analysis to set a range in which to negotiate.

[107] From R. Goldscheider, "The Negotiation of Royalties and Other Sources of Income from Licensing" (1995), 36(1) *IDEA* 1, at 7. In a real licence, companies usually license a bundle of intellectual property and know-how as the "technology." In contrast, in a reasonable royalty calculation, the hypothetical licence is stated in terms of the infringed intellectual property only. This should not have a particularly strong effect on the calculation, however, because the goal is to restore the rights holder by determining what royalty it would have received if a real licence had been negotiated.

[108] *Supra* note 14. It should be noted that Heald D.J. found the plaintiff's expert's testimony unpersuasive, so the defendant's expert's testimony was to a certain extent unopposed.

[109] See *Jay-Lor*, *infra* note 124, at para. 159.

[110] See Parr, *supra* note 102, and G.V. Smith and R.L. Parr, *Valuation of Intellectual Property and Intangible Assets*, 2d ed. (Toronto: John Wiley, 1994). See also criticism of the 25 percent royalty rule in J.W. Schlicher, *Licensing Intellectual Property* (Toronto: John Wiley, 1994), 34.

[111] See Goldscheider, *supra* note 99, at §10.04. In particular, deviation from the standard rates may occur most often with drastic or pioneer innovations: these inventions are the most valuable and are perhaps the innovations most in need of legal defence.

[112] This approach was originally used on appeal in *Georgia-Pacific Corp.*, *supra* note 93, and has been used or referred to in a number of cases including *Panduit*, *supra* note 36; *Tektronix Inc. v. US*, 552 F. 2d 343, 193 U.S.P.Q. 385 (Ct. Cl. 1977); *Paper Converting Machine v. Magna-Graphics*, 745 F. 2d 11, 223 U.S.P.Q. 591 (Fed. Cir. 1984); and *TWG Mfg. Co. v. Dura Corp.*, 789 F. 2d 895, at 899 (Fed. Cir. 1986). Note that to determine the profit earned by the infringer, the absorption cost approach is used to deduct both variable and a portion of fixed costs from the infringer's net sales. Note that this approach is not appropriate when the premise of a willing licensor/licencee is not satisfied: see *Monsanto Co. v. Ralph*, *supra* note 81, in which the Federal Circuit affirmed an award leaving the defendant without any profit.

[113] Recognizing these limitations, Parr, *supra* note 102, at 159-62, suggests that the "normal profit margin" be replaced by a "commodity product profit margin," where the commodity product margin should be derived from a product that (1) lacks intellectual property, (2) requires a similar amount of investment in complementary assets, and (3) is in the same (or a closely similar) industry as the infringing product.

[114] The analysis for this section is largely based on Smith and Parr, *supra* note 110; Parr, *supra* note 102; and R.L. Parr, "Advanced Royalty Rates Determination Methods," in R. Parr and P. Sullivan, eds., *Technology Licensing* (Toronto: John Wiley, 1996).

[115] An investment return approach can also be used to determine a lower bound of acceptable royalties for the licensor. Determining the lower bound is straightforward if the licensor's only income from the intellectual property is the royalties; however, it can be quite complicated and subjective if the intellectual property is exploited through a complicated combination of sales and licensing.

[116] *Watson Laidlaw*, *supra* note 8, at 120, per Lord Shaw. To the same effect, see *Meters*, *supra* note 8, at 164-65, per Moulton L.J.

[117] See S.M. Waddams, *The Law of Damages*, 2d ed. (Aurora ON: Canada Law Book, 1991), ¶5.990, discussing the restitutionary argument.

[118] R.J. Sharpe and S.M. Waddams, "Damages for Lost Opportunity to Bargain" (1982), 2 *Ox. J.L.S.* 290, at 290; see also Waddams, *supra* note 117, at ¶9.30 to ¶9.130.

[119] *Unilever PLC v. Procter & Gamble Inc.* (1993), 47 C.P.R. (3d) 479, at 572 (F.C.T.D). The award was set at an amount greater than a reasonable royalty as compensation for the non-issuance of an injunction against the defendants.

[120] See J.A. Nitikman, "Taxability and Deductibility of Judgments and Awards," in *1991 British Columbia Tax Conference* (Toronto: Canadian Tax Foundation, 1991), tab 3, at 52-55, and S.H. Hugo and L.A. Rautenberg, "Damages and Settlements: Taxation of the Recipient" (1993), 41(1) *Can. Tax J.* 1, at 36-37.

[121] Formerly known as the Canada Customs and Revenue Agency (CCRA) and, before that, as Revenue Canada.

[122] *Information Circular* 87-2R, "International Transfer Pricing," September 27, 1999. para. 28. See also U.S. Internal Revenue Code Regulations at 26 CFR §1.482-1(b)(1).

[123] *Patent Act*, R.S.C. 1985, c. P-4.

[124] *Jay-Lor International v. Penta Farm Systems Ltd.* (2007), F.C. 358, 59 C.P.R. (4th) 228, at paras. 120-122. See also *Baker Petrolite Corp. v. Canwell Enviro-Industries Ltd.* (2001), 13 C.P.R. (4th) 193, at 253 (F.C.T.D.).