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**Assessing Economic Impacts of Copyright
Reform on Selected Users and Consumers**

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Prepared for Industry Canada

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Executive Summary

The United States and the European Union have recently extended the standard protection term of copyrighted works to life of the author plus seventy years. This report examines how a similar lengthening of the term in Canada would influence creative efforts by Canadian authors, and how it would affect access to works by Canadian users and consumers.

The report concludes that extending the standard protection term to life of the author plus seventy years would have an insignificant impact on the number of works created in Canada. User cost may increase slightly in response to a higher cost of locating right holders and negotiating rights to works whose protection term has been extended. The report also argues that a longer protection term will likely contribute in a small way to an outflow of royalties from Canada. That outflow would not be reversed if Canada adopted a reciprocity rule as an alternative to a national treatment rule in respect of the extra years of protection.

In order to fulfill its obligations under the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) Canada will have to amend some sections of the *Copyright Act*. The report explores how specific amendments would affect users of photographs and sound recordings.

With respect to photographs, the report probes the effects of granting photographs originally owned by corporations the protection term currently enjoyed by works owned by natural persons. The main conclusion is that adoption of a rule that grants protection to all photographs for a period equal to life of the photographer plus fifty years would not affect users adversely. It would have no bearing on creative effort. The report also makes the case that fair dealing provisions should not extend to unpublished photographs.

In regard to sound recordings, the reports examines whether the amendments required under the WPPT in the case of makers of sound recordings should be accompanied by a matching adjustment of the term of protection given to performances. It argues that adoption of a protection term of 50 years following publication, as provided by the WPPT for makers, will have no significant effect on creative effort. It also maintains that there is no economic rationale to support the claim that extension of the term of protection for makers calls for a similar change in the protection given to performances.

The report also addresses the question how educational institutions, museums, libraries and archives would be affected if Canada amended its law to protect rights management information (RMI) as mandated by the aforementioned treaties. RMI is information, generally embedded digitally in a work that identifies the work, the author of the work and other stakeholders. It often spells out conditions of use. RMI may also contain codes that allow right holders to track usage of a work.

The report examines the economic trade-offs of alternative forms of legal protection. It investigates possible remedies against tampering with RMI. It looks at the following options: 1) Adoption of legal measures to protect information that identifies a work and the owner(s) of a work; 2) adoption of legal measures to protect information that identifies a work, the owner(s) of a work and the terms and conditions of use; 3) and adoption of legal measures to protect information that identifies the work, the owner(s) of the work, the terms and conditions of use and the codes that allow rights holders to track the usage of their material.

The report argues that museums, libraries and archives would likely suffer some adverse effects from measures designed to protect rights management information. However, these effects are not sufficiently important to justify a grant of broad exemptions from anti-tampering rules to these institutions. One instance that justifies an exemption is when rights management information has been embedded by parties that do not hold rights in the work and where it interferes with functions such as cataloguing.

The report clarifies why tracking information should not be given legal shelter. It also describes the advantages provided by specialized institutions that hold keys to technologically protected works.

With respect to remedies, the report makes the case that legal tools against tampering with RMI should track closely the measures that target infringement of copyright. Right holders should be entitled to injunctions and damages when the RMI embedded in their copyrighted works is tampered with. However, when the defendant proves absence of intent to engage in illegal tampering, and has not disseminated the material he has tampered with, remedies should be limited to injunctions. Such limitation is not called-for when the work has been registered, the more so when the RMI shows that it has been registered.

Deliberate tampering for commercial purposes, or the distribution of material that has been tampered with for commercial purposes, justify the option of criminal measures as it does when copyright has been infringed. The report also argues for the application of administrative monetary penalties against the non-commercial distribution of material when the embedded RMI has been tampered with.

The conclusions of this report are based on a review of the literature, interviews with stakeholders and limited use of publicly available data. The main sources of information on issues relating to term extension are: 1) The economic literature on copyright and other intellectual property; 2) the law and economics literature on the *Sonny Bono Copyright Term Extension Act* including writings about current practices that concern digital rights management; 3) and documents submitted to the US Congress by supporters and opponents of term extension. This material is complemented by interviews with users and producers of photographs and stakeholders in the music industry. With regard to rights management information, the report is to a significant extent based on interviews with staff of educational institutions, libraries, archives and museums.

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Because quantitative information relevant to most of the issues addressed in the report is lacking, the analysis is almost entirely qualitative.

Table of contents

Executive summary

I. Introduction -----	2
II. Methodology -----	3
III. Extending the term of protection -----	3
1. Effects on creative effort -----	4
a) Term extension for future works only -----	4
b) Extension for future and currently protected works-----	5
2. Effects on inflows and outflows of royalties-----	7
3. Further effects on users and consumers -----	9
4. Harmonization issues -----	9
a) Transaction cost once again-----	10
b) A digression on patents -----	10
IV. Photographs-----	11
1. Current law and policy options-----	11
2. Extending the protection term for works owned by corporations---	12
3. Fair dealing and publication -----	15
V. Sound recordings-----	16
VI. The protection of rights management information (RMI) -----	18
1. The WIPO treaties-----	18
2. Balance of power shifts-----	19
3. Types of information and legal measures -----	21
a) An economic perspective -----	21
b)Erroneous information on stakeholders and conditions of use	22
4. Tracking information -----	23
5. Specialized organizations -----	25
6. Remedies -----	25
VII. Final remarks -----	30
Appendix 1 -----	31
Appendix 2 -----	33
Appendix 3 -----	39
Appendix 4-----	40

I. Introduction

Canada must amend the *Copyright Act* to fulfill its obligations under the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT). This report explores how some amendments under consideration would affect users of copyrighted materials, in particular users of photographs and sound recordings. It also examines how legal measures to protect rights management information would affect educational institutions, museums, libraries and archives.

Copyright law has evolved in countries that are the Canada's major trading partners. Recent extensions of the protection term in the United States and the European Union may affect Canadian stakeholders in ways that call for a similar adjustment in Canada. The report examines how a lengthening of the term of protection in Canada would influence creative effort and the dissemination of works.

With respect to photographs, the report probes the effects of granting photographs originally owned by corporations the protection term that the *Copyright Act* now grants to works owned by natural persons. In regard to sound recordings, it examines whether the changes required under the WPPT for makers of sound recordings should be accompanied by a matching adjustment for performances.

The report also examines the economic trade-offs of alternative forms of legal protection of rights management information (RMI). It explores the effects of the following options:¹

Option 1: Adoption of legal measures to protect information that identifies a work and the owner(s) of a work.

Option 2: Adoption of legal measures to protect information that identifies a work, the owner(s) of a work and the terms and conditions of use.

Option 3: Adoption of legal measures to protect information that identifies a work, the owner(s) of a work, the terms and conditions of use and the codes that allow rights holders to track the usage of their material.

Section II briefly reviews the methodology. Section III discusses the effects of term extension on incentives to create and disseminate, on the prices of works, and on international flows of royalty payments. It also explores the merits of cross-country harmonization of protection terms. Sections IV and V deal more specifically with photographs and sound recordings. Section VI explores the legal protection of rights management information. It gives a brief overview of the claim that the diffusion of digital technology has shifted the so-called "balance of power" between right holders and users of copyrighted material to the detriment of the latter. It addresses the question whether museums, libraries and archives should be authorized to manipulate RMI and explores what remedies should apply against unauthorized tampering. Section VII offers concluding remarks.

¹ RMI refers to information that identifies a work, the author of the work and other stakeholders. It often spells out conditions of use. RMI may also contain codes that allow right holders to track usage of a work.

II. Methodology

The analysis is based on a review of the literature, interviews with stakeholders and limited use of publicly available data. The main sources of information on issues relating to term extension are: 1) The economic literature on copyright and other intellectual property; 2) the law and economics literature on the *Sonny Bono Copyright Term Extension Act*; 3) and documents submitted to the US Congress by supporters and opponents of term extension.

This material is complemented by interviews with users and producers of photographs and stakeholders in the music business. With regard to RMI, the report is to a significant extent based on interviews with staff of educational institutions, libraries, archives and museums.

Because quantitative information relevant to most of the issues addressed in the report is lacking, the analysis is almost entirely qualitative.

III. Extending the term of protection

The *Copyright Act* provides a standard protection term equal to life of the author plus fifty years. American law by contrast, typically grants protection for a period equal to life of the author plus seventy years. In 1998, the US Congress extended the term by 20 years for future and existing works. Several years earlier, the European Union extended the minimum protection period to life of the authors plus 70 years unless the country of origin provides a lesser term (i.e., Canadian works are currently granted protection of life plus 50 years). These jurisdictions now protect works for a longer period than required by the Berne Convention.

The most obvious options with respect to term extension in Canada are: 1) Extension of the term for future works only; 2) extension of the term for future and existing works not yet in the public domain; 3) and extension for future works, existing works not the public domain, *and* works that would not presently be in the public domain if the extended term had been effective at the time they were created, fixated or published. Under the latter option, some works already in the public domain would enjoy renewed protection.²

This report looks only at options 1 and 2 for reasons that will be made clear below. It explores the consequences of extending copyright to life of the author plus seventy years.

² E.g. a work that had been in the public domain because the author died 55 years ago would get an extra 15 years of protection if the term were lengthened to 70 years. Options 2 and 3 may require some refinement because some rights pertaining to a work may subsist after expiration of other rights. It is more accurate to think in terms of extending the term of specific rights than extending the term of protection of a work. For the purposes of this report, however, it is adequate to reason as if all rights to a work expired on the same date.

1. Effects on creative effort

A widely shared view about copyright is that it produces the economic incentive to create. That notion is based on the idea that if authors did not have the right to prohibit copying, original work would be replicated shortly after publication. Because competition would quickly drive the prices of works towards the cost of replication, authors would not be able to recover their initial investment in creation, including opportunity cost.³ For that reason, authors endowed with economic foresight and motivated by prospects of financial reward would refrain from undertaking creative ventures, or provide too little effort.

Copyright also entails an economic cost. It is a cost that derives from a reduction in the dissemination of works. Most works of authorship are public goods. This means that their use by one person does not diminish the quantity available for use by others. Economic efficiency dictates that existing works be offered at the low cost of replication or making available. This rarely happens when sellers hold copyrights. Right holders' demand for royalties raises the price of works above the cost of replication and dissemination. This bars purchases by some individuals willing to pay an amount that exceeds that cost. The difference between the prices these individuals are willing to pay and the cost of replicating and distributing a work represents a loss to the economy.

One is therefore confronted by an economic trade-off. Increases in the scope and duration of protection stimulate creation but lessen the dissemination of existing works.⁴ While the principles underlying the optimal blend of scope and duration of protection are well understood, a lack of data makes it impossible to determine what that combination is. For that reason, this report makes no claims in regard to the optimality of a particular protection term. It provides only a qualitative assessment of likely effects of term extension on creative effort, prices, dissemination of works, and the external balance of royalty flows.

a) Term extension for future works only

Term extension affects incentives to engage in creative effort because it determines the difference between revenue and cost during the extra protection term. Because the cost of creation is incurred upfront, whereas rewards are distributed over time, one needs a

³ To keep an author in business, a successful release of a work must generate enough income to cover its own cost as well as the cost of unsuccessful releases.

⁴ Such loss is not an inescapable outcome of copyright. When right holders engage in price discrimination (also called differential pricing), they may be able to tailor prices closely to the benefits that users derive from access. This allows them to serve marginal consumers at lower prices while earning higher margins from other consumers. Discriminatory pricing requires that users not be able to engage in reselling, or that the price differential across buyers be insufficient to make resales worthwhile. Discriminatory pricing is practiced by performing right societies that grant blanket licenses for which they collect royalties that correlate with the value of works to users.

common standard for comparison purposes. The most commonly used standard is expected present value.⁵

Consider a term extension that would prolong the protection period in Canada to life plus seventy years. Such extension confers a protection period of 110 years to a work authored by a forty-year-old Canadian with a life expectancy of 80 years. It is straightforward to calculate that when royalties remain constant over time and the discount rate is 7%, adding 20 years contributes a mere 0.16% to the present value of a work created by the author (See appendix 1). It is evident that such trivial increase is unlikely to encourage authors to set back their alarm clocks and subject their creative minds to additional early morning strain.⁶

Under the more realistic assumption that utilization of a work declines as the work ages, the contribution to present value of term extension becomes even smaller.⁷ Furthermore, not all revenue from creative work depends on the existence of copyright. For example, composers may earn substantial income from performing their music. If so, a 0.16% increase in the revenue derived from copyright implies an even smaller increase in the present value of all revenues derived from a work. Jointly, these observations imply that the actual increase in present value is likely not to exceed a fraction of 0.16%.

Consider now the effects on dissemination. Extending the protection term may reduce dissemination of the small portion of works remaining in circulation many years after creation. Because such reduction would take place in the distant future, welfare effects must be discounted. This means that the impact on consumers in terms of present value is insignificant.

b) Extension of the protection term for future *and* currently protected works

Two additional factors now come into play. First, it becomes more costly to use as building blocks in the creation of derivative works, the original pieces whose term has been extended. Second, a possible higher cost of access to works whose term has been extended may influence the demand for new creations.

Authors of derivative works would have to incur extra costs to locate the persons who hold the right in original works whose term has been extended, obtain permission, and possibly pay royalties. Lengthening of the protection term could therefore adversely affect the

⁵ The expected present value of a work is obtained by discounting the difference between present and expected future revenues from a work and the costs of producing it. Discounting is the process that determines the present value of future earnings and cost.

⁶ Appendix 1 shows that this conclusion holds for a significant range of discounts rates.

⁷ Landes and Posner estimate that the "average annual depreciation rate of copyrighted works in the US has ranged from a low of 5.4 percent in 1990 to a high of 12 percent in 1914" and that "the estimated depreciation rate for works registered in 1934 is .07, implying that of the works registered that year 50 percent had fully depreciated by 1940, 90 percent by 1970, and 99 percent by 2000; fewer than 1 in 750 works registered in 1934 will have commercial value in 2030. W.M.Landes and R.A.Posner, *Indefinitely Renewable Copyright*, August 2002 at http://papers.ssrn.com/s3/delivery.cfm/SSRN_ID319321_code020718570.pdf?abstractid=319321.

creation of derivative works.⁸ However, one could also argue - as American supporters of the *Sonny Bono Term Extension Act* have - that extending the protection term of currently protected works encourages those who hold rights in them to invest in derivative productions. There reason is that the latter would be sheltered from competition by other works derived from the same original. Such an outcome cannot be ruled out on an a priori basis. However, a greater likelihood of increased production of derivative works by right holders must be set against a lower production of derivative works that draw on the same original by a potentially larger number of outsiders. Besides, one could argue that holders of rights in the original work have a greater incentive to produce derivative works when their copyrights are about to expire. The reason is that waiting exposes them to the risk of being beaten to the punch by outsiders.

It is impossible to assess which of the aforementioned outcomes is most likely. What can be said is that the effect on production of derivative works - whether positive or negative- could be felt as soon as term extension becomes effective.⁹ There is no slimming down of present value attributable to discounting. The reason is that some material on the verge of entering the public domain may already be slated to serve as a building block

Price is the second channel through which term extension could affect incentives to create. Because new and old works are interchangeable in certain uses, an increase in the price of older works resulting from term extension could boost the demand for new works.¹⁰ A priori, however, there is reason to believe that any shift in the demand for new works would be very small. First, copyright often accounts for a small portion of the price of a work. Any percentage change in the royalty rate therefore implies a much smaller percentage change in the price paid by the user. Second, among existing works that could substitute for a future creation, only a small portion would be accounted for by works still in use and created by an author who has died between 50 and 70 years ago. Thirdly, a substantial number of substitutes could be already in the public domain.

It is appropriate at this point to comment briefly on the effects of a retrospective extension of the protection term to works that have already entered the public domain. Analysis of this option (option 3) parallels that of option 2 with one potentially significant difference. One must consider the possibility that at the point in time extension becomes effective, some authors will have undertaken projects that draw on material that has entered the

⁸ The extent to which this affects overall creative effort depends on the substitutability between building blocks drawn from public domain works and building blocks extracted from older works that have not yet entered the public domain. Some authors suggest that the effortlessness of cutting and pasting digital files should increase the production of derivative works, in particular for non-commercial purposes. See Joseph P. Liu, "Copyright Law's Theory of the Consumer" Boston College Law Review, Spring 2003 at www2.bc.edu/~liujr/special/techsymp/papers/liu.doc.

⁹ The point that creative production builds on earlier production was made first with respect to patentable creations. See S Scotchmer, Standing on the Shoulders of Giants: Cumulative Research and the Patent law, J. of Economic Perspectives, 1991, vol. 5(1), 29-41.

¹⁰ The increase in the price of older works could be attributed to royalties payable during the extra years of protection and to the cost that users incur to locate right holders and negotiate with them. The magnitude of the shift in the demand for future works depends on: 1) The degree of substitutability between future works, older works still under protection, and works in the public domain; 2) and the number of substitutable works that would fall in the public domain within the next twenty years.

public domain. Some authors may have selected that material precisely because it was no longer protected. Returning such works under the umbrella of copyright could disrupt such projects when permission to use is refused, or when it is granted by the person who holds the rights to the original work on condition of substantial royalties.

In principle, one could infer the effects of term extension from the observation of changes in the use of copyrighted material at the time the rights expire. Unfortunately, there is very little reported evidence about such effects. The available information, all anecdotal, concerns motion pictures. Gomery relates the existence of a "vibrant marketplace for public domain films" supplied by "over 200 competing companies offering public domain motion pictures in various forms at various prices". He claims that Hollywood studios would sometimes vend public domain titles, but would only do so for big titles. Only smaller companies release the less profitable films.¹¹

The main factor contributing to a reduction in the use of existing works is probably the cost of locating right holders. That cost increases as works become older.¹² Finally, it should be noted that although effects on dissemination are likely to be small, they would be felt as soon as the protection term is extended.

2. Effect on inflows and outflows of royalties

The impact on creative effort also depends on the share of royalty revenue that Canadian authors draw from domestic sources. The impact becomes weaker when foreign uses of works produced in Canada become important relative to domestic uses. The reason is that the portion of authors' income affected by Canadian copyright law falls.¹³

In an open economy like Canada, authors' expected income depends on the scope and duration of protection in the home country *and* in foreign countries. An increase (decrease) in the amount of royalties paid by home-based users to foreign right holders reduces (increases) home welfare.

There are two sources of royalty inflows into Canada: 1) Service-based inflows generated by foreign uses of works to which Canadians hold rights¹⁴; and 2) product-based inflows that proceed from the export of products containing Canadian copyrighted material.¹⁵

¹¹ D. Gomery, (1993), The Economics of Term Extension for Motion Pictures, Research Report for the Committee for Film Preservation and Public Access, Docket No. RM 93-8 to the Copyright Office Notice of Inquiry on Duration of Copyright Terms of Protection, at www.law.asu.edu/HomePagesKarjala/OpposingCopyrightExtension/com.

¹² This sometimes serves as a justification for limiting the duration of protection.

¹³ Because the variety of works available to home consumers is less dependent on domestic creation when imported materials are readily accessible, one's view about the appropriateness of term extension also hinges on whether the only objective is to insure that consumers have access to a variety of content, or whether one is also concerned about the national origin of content.

¹⁴ E.g., broadcast by foreign radio stations of songs written by Canadian composers, or production in a foreign country of CD's containing copyrighted material to which Canadians hold rights.

¹⁵ The royalties received by Canadians are included in the prices foreigners pay for the exported goods.

Correspondingly, there is an outflow of royalties from Canada when: 1) Residents make use of works to which foreigners hold rights; and 2) residents import goods containing copyrighted material to which foreigners hold rights.

The welfare effects of term extension depend on the impact on net inflows - i.e. inflows less outflows- of royalties from both sources.

Extension of the protection term does not influence the amount of service-based inflows originating in countries such as the US that grant national treatment with respect to works older than life-plus-fifty.¹⁶ It does increase service-based inflows from jurisdictions such as the European Union that abide by the rule of the shorter term with respect to the extra protection period not mandated by the Berne Convention.

Product-based inflows would increase as a result of term extension in Canada. They do not depend on whether the country that imports goods containing Canadian copyrighted material applies a national treatment rule or a reciprocity rule. The size of the additional inflows depends on the value of Canadian copyrighted "older" material incorporated in the exported goods.

Extension of the protection term also produces an increase in service-based outflows. However, payments of royalties to a particular country do not hinge on whether that country abides by a national treatment or a reciprocity rule. They depend in a minor way on whether Canada abides by a national treatment or a reciprocity rule. The reason is that the US which abides by a national treatment rule, accounts for 94% of total service-based payments and 72% of receipts. The EU which has adopted a reciprocity rule accounts for 5% of payments and 18% of receipts.¹⁷

Lengthening of the protection period does not produce an increase of product-based outflows. This is true whether Canada abides by a national treatment or adopts a reciprocity rule. The amounts collected by foreign authors in payment for copyrighted material contained in goods imported into Canada are determined by the rules that apply in the exporting countries.

Statistics Canada data can be used to make inferences about the magnitude of the aforesaid effects. This requires assumptions about the portion of protected works slated to lose protection within the next twenty years under current law. It also calls for hypotheses about the royalty rates applicable to these works relative to works in general.

The detail of the calculations is shown in Appendix 2. The calculations make use of the assumption that the works scheduled to lose protection within the next 20 years under the

¹⁶ This applies whether Canada abides by a national treatment rule for the extra years of protection or by a reciprocity rule.

¹⁷ These numbers are derived from Tables 1 and 2 in Appendix 2. The figure of 94% is obtained by dividing 385 (row 2 in Table 2) by 410 (row 1 in Table 2). Similarly, 72% is obtained by dividing 150 (row 2 in Table 1) by 208 (row 1 in Table 1). Also, 0.05= 21 (row 5 in Table 2) divided by 410 (row 1 in Table 2) and 0.18=38 (row 5 in Table 1) divided by 208 (row 1 in Table 1).

current law account for 3% of all copyrighted works. The calculations also assume that the royalty rates on these works are on average half as high as for other works.

Because the most recent data on international trade in copyright-intensive cultural goods pertain to 1997, all calculations have been carried out for that year. They show that term extension in 1997 would have produced an annual increase in net outflows from all sources amounting to 2.43- 2.77 million 1997 dollars.¹⁸

3. Further effects on users and consumers

The extent to which increased royalties are passed on to final consumers depends on the intensity of competition among right holders and among the suppliers of complementary inputs used in the production of copyrighted material. The more intense the competition, the greater the portion of cost increases passed on to final consumers.

Competition appears intense in the case of photography. There are great many suppliers of photographs. Also, barriers to entry in the profession are low. Competition appears less intense in the case of makers of sound recordings where a very significant portion of the market is supplied by a few majors.

Works of recent vintage could also experience a price increase because works that would have entered the public domain and could have served as substitutes would no longer be available for free. This increase, however, is likely to be very small.

Another element of user cost is the expense of tracing right holders and negotiating with them. For older material this cost may represent a considerable portion of the benefit that the users derive from a work. It may in fact exceed that value.

The cost of tracing the owner of rights in photographs is particularly high because most photographs do not carry identifying marks. While tracing appears relatively easy in the case of sound recordings, transaction cost could still be high because users have to clear rights and make payments to a potentially very large number of stakeholders (composers, publishers, makers of sound recording, record companies, performers, etc.).

4. Harmonization issues

American supporters of the *Sonny Bono Term Extension Act* have argued at times that a longer protection term carries the advantage of harmonizing US and European law. It appears, however, that this claim is grounded solely in balance of payment considerations. This issue does not arise in the same way for Canada because the country is not a major net exporter of copyrighted material.

Because the issue of international royalty flows has already been dealt with, we focus on the question whether term extension could be beneficial for other reasons.

¹⁸ Appendix 2 also discusses why one must exercise great caution in interpreting these numbers.

a) Transaction cost once again

On a priori basis one can argue that harmonization of protection terms produces efficiency gains that flow from a reduction in enforcement cost. There is a lower risk of non-intentional infringement of foreign works. Also, monitoring for infringement by on-line users is simplified.

However, attainment of these goals is likely to hinge on the existence of far-reaching harmonization, i.e. harmonization that extends beyond equalization of the term of protection. Certain thresholds in terms of harmonization of laws would probably have to be crossed in order to achieve the aforementioned advantages. There is no reason to believe that harmonizing the protection terms will achieve such crossing.

Calls for harmonization based on transaction cost savings must be justified by a showing that: 1) The advantages of significant harmonization outweigh the losses in terms of net royalty outflows; and 2) that if harmonization of the protection term and other amendments to the *Copyright Act* are insufficient to bring about the aforementioned crossing, it is still preferable to extend the protection term at this time as an alternative to postponement until other harmonizing amendments are made.

b) A digression on patents

The effects of term harmonization have been examined in a recent study on patents.¹⁹ The findings are relevant to this study because in qualitative terms the effect of harmonization of copyright is likely to be similar.

The study finds that a country's optimal protection term depends on the protection term chosen by its trading partner. When the term of protection is longer in the country with the comparative advantage in R&D (country A) then, extending the protection term in the other country (country B) carries a cost to that country that stems from a deadweight loss on goods invented in that country and a loss in consumer surplus on goods invented abroad. It carries a benefit that derives from the increased incentive of domestic and foreign firms to undertake research. The optimal duration of protection is attained when the two effects balance at the margin. If extension of the protection term in country B does not spur any additional innovation, there is no advantage for that country to increase the term of protection.

As already indicated, the effect of term extension on creative effort is negligible. The implication is that Canada as a net importer of copyrighted material would derive no advantage from term extension.

Empirical studies on the effects of harmonization of intellectual property laws are few. Recent work on the impact of international patent harmonization under WTO's agreements

¹⁹ Grossman G.M., International Protection of International Property, National Bureau of Economic Research, Working paper 8704, 1987, at www.nber.org/papers/w8704.

on TRIPS shows that patent harmonization may generate large transfers of income between countries. These transfers have significantly altered the perceived distribution of benefits from the Uruguay Round, with benefits significantly enhanced for the US. Developing countries and Canada have been shown to suffer losses as result of harmonization.²⁰

IV. Photographs

1. Current law and policy options

The *Copyright Act* identifies the author of a photograph as the person who "(a) was the owner of the initial negative or other plate at the time when that negative or other plate was made, (b) was the owner of the initial photograph at the time when the photograph was made where there was no negative or other plate".

The original owner of copyright in a photograph is generally the photographer. However, when a photograph is ordered for valuable consideration and paid for, the person commissioning the photograph or employing the photographer- a natural or moral person - is deemed to be the first owner of the work. This rule applies only in the absence of any agreement to the contrary. Also, when the photograph is made in the course of an employment relationship, copyright ownership will, absent an agreement to the contrary, belong to the employer.

Before 1997, copyright in photographs subsisted for fifty years from the end of the calendar year of the making of the initial negative, and if there was no negative, from the making of the initial photograph. The 1997 amendments replaced this treatment by the standard regime of life plus 50 years. However, the amended rule applies only where the original owner is a natural person or a corporation in which the person who would have qualified as the author holds the majority of voting shares. When the owner of the initial negative is a corporation that is not majority-owned by a natural person, the term of protection remains fifty years from the end of the year in which the negative was made.²¹

The WIPO Copyright Treaty stipulates that in respect of photographic works, the contracting parties shall not apply Article 7(4) of the Berne Convention. The latter gives parties to the Convention the freedom to determine the term of protection of photographs. It imposes only a minimum term of 25 years from the making. The implication is that signatories of the WIPO Copyright Treaty (WCT) must give photographs a standard protection term equal to life of the author plus fifty years. This applies to future works and existing works.

Industry Canada has raised the following questions in regard to photographs:

²⁰ McCalman, Reaping what you Sow: an Empirical Analysis of International Patent Harmonization, Working paper 374, Research School of Social Sciences, Australian National University, June 1999, 32 pages at <http://eprints.anu.edu.au/documents/disk0/00/00/02/90/>.

²¹ The law does not preclude negotiations between corporations and photographers about a reassignment of rights in the photograph.

- 1) What is the effect of applying the standard rule of author's life plus fifty years to all photographs not yet in the public domain?
- 2) If the standard rule applies to all photographs, should there be a provision for fair dealing in the case of unpublished photographs? Should any such fair dealing exception be limited to photographs produced by Canadian photographers?

2. Extending the protection term for works owned by corporations²²

The working hypothesis underlying our analysis is that the current rule in regard to the ownership of rights in photographs made by employees of corporations or commissioned by corporations will be maintained.²³

Effect on the motivation to create

Under the assumption that a photograph generates a constant income stream, one easily determines that adoption of the protection period mandated by the WCT increases the present value of royalties earned by a forty-year-old photographer by 3.04%.²⁴

Photographs ordered by corporations are generally intended for a single use that immediately follows production. For the great mass of photographs the probability of re-use 50 years after creation is virtually nil. Although 3.04% is larger than the increase calculated in section III, taking into account the typical time path of use of photographs implies that extension produces a negligible incentive to create.

Effect on the use of existing photographs

Term extension would raise the cost of using some works. It could increase the cost of using works older than fifty years at the time of intended use, known to have initially belonged to corporations, and whose author has died less than fifty years ago. Under the projected amendment, the rights in works belonging to that "age group" will receive a lease on life. We will refer to them as LOF works.

²² In the remainder of this section the term corporation is used to denote corporations in which the photographer does not own the majority of shares.

²³ The question how users are affected by a resolution to base the term of protection of works owned by corporations on the life of the photographer is not the same as the question how users would fare under a rule that assigns to photographers copyrights in works commissioned by corporations or made by their employees. Those who support a rule that would grant photographers the rights in works commissioned by corporations to photographers take the view that such grant implies a protection period of life plus fifty years.

²⁴ As in section III (of this study...) the calculation assumes a 7% discount rate and a life expectancy of 80 years.

Amendment of the protection term could also affect the cost of using works that users, including LAMs and educational institutions, believe to *possibly* have had a corporation as the initial owner and *possibly* be LOFs.²⁵

For expository purposes, it is useful to analyze separately the case where the user has full information about a photograph and the case where information is not available or incomplete. Full information means that the user knows the following about the photograph: The year it was made; the name and address of the right holder; and the name and address of the photographer including the year of death if no longer alive.

Consider first the case where a potential user - a museum perhaps - has full information about a LOF work. Because there is no need to trace the right holder, term extension can burden transaction cost only if it increases the cost negotiating with the corporation owning the photograph.²⁶ Eventual additional costs are royalties.

In practice though, the extra cost is likely to be smaller. The reason is that in order to save on negotiation cost and possibly royalties, users may to choose a less costly option. They could use a public domain photograph or a photograph downloaded from a stock photography site. Users may also choose to have a new photograph made for them. It seems reasonable to consider that unless a simple phone call is sufficient to obtain permission and agree on a fee, users will opt for a substitute work. If so, the additional user cost resulting from term extension is the expense associated with the chosen alternative plus the eventual "harm" ensuing from use of picture that is less fitting.²⁷

Consider now the problem faced by a user who knows that the photograph is a LOF work but doubts whether its initial owner was a natural person or a corporation.²⁸ Such user cannot escape the cost of locating the right holder. The latter, however, is true whether or not one amends the term of protection. Adjusting the term does not affect the cost of locating the right holder. It can only contribute to negotiation cost and royalties if the search reveals that a corporation was the initial owner.

Consider next the case where a user has no doubt that the work is owned by a corporation but is uncertain whether the work is a LOF. The question whether transaction costs are

²⁵ The cost of using photographs known not to be LOF works *or* known not to have been owned at first by a corporation cannot be affected by the required change.

²⁶ Or with the natural person who may have acquired the rights that were initially owned by the corporation.

²⁷ The substitute is less likely to be available when the user needs a photograph taken on a particular date e.g. the photograph of an historical event. Some commercial users of photographs - magazines in particular - maintain that they will not revise their approach to acquiring photographs in response to a change of the duration of protection or of the rule that establishes ownership of copyright. The reason is that it is simpler to commission new photographs or use photographs from sources where one can be confident that rights have been cleared, than to look for right holders and negotiate with them. When use is made of existing photographs, these users often proceed as if the person from whom they obtain permission to utilize the work has cleared all the rights. Every so often users take steps to ascertain ownership of rights, particularly when the subject matter of the photograph is a work of art such as a sculpture or painting. However, users appear reluctant to go through this process when locating right holders *or/and* obtaining authorization entails more than minimal bother.

²⁸ The date of production could appear on the back of the photograph or be inferred from the subject matter.

higher under the amended rule now depends on whether the user knows for sure that the photograph has existed for more than 50 years. When such certainty exists, the amended rule creates an additional cost of locating the right holder if the identity of the owner is not known.²⁹ The user may also be forced to incur negotiation costs and pay royalties for works found not to have entered the public domain.

If the user is not sure that the work is older than 50 years, extension of the term does not add to the cost of locating right holders. The reason is that even under the current rule users who want to avoid the risk of infringement cannot sidestep that cost. For reasons already mentioned, users who are not sure that a photograph is a LOF work may choose substitute photographs under the current and the amended regime.

The only remaining case is where the user is uncertain about ownership and considers that the work might be a LOF. It is clear that regardless of the applicable protection term, users who wish to avoid the risk of infringing will have to incur the cost of locating the right holder.

It is important at this point to stress that in all cases where information about a work is not complete the option of using substitute works is more attractive. The reason is that it allows users to save on the cost of locating right holders.³⁰ And, when the consumer opts for a substitute, changing the protection term cannot affect transaction cost.

In summary, amending the protection term of works owned by corporations will not increase users' cost of locating right holders unless the following conditions are met: 1) Users know that the work is older than 50 years; 2) users know that a corporation was the initial owner (and may still be the owner) but do not know the identity of the owner; 3) and users are not sure whether the photograph has entered the public domain or remains a LOF work.

When the cost of locating right holders in a LOF work is high compared to the loss suffered as a result of using a lesser alternative, users will opt for the latter under the amended regime as they do at present. But then, changing the term of protection cannot affect user cost.

Amending the rule the current rule imposes an additional cost of negotiation and possibly royalties on users of LOF works owned by corporations in those cases where a substitute work is not a desirable option. The meager information that is available suggests that such additional cost would be incurred on rare occasions. This is because LOF works owned by a corporation are rarely used. As indicated, the vast majority of works owned by corporations are intended for an immediate single use.

²⁹ The user may be aware that the work has a corporate initial owner but may not know which corporation is the owner. The corporation that originally owned the work may be identified on the back of the picture but may have been absorbed by another entity.

³⁰ This component of transaction cost is likely to be greater than the other components.

A further question is whether the cost of determining if a work has entered the public domain is higher under WCT rule. There is no unambiguous answer to this question. When the author is unknown, the current rule appears to entail a lower cost because it is often possible to determine the approximate date a picture was taken from the subject matter that appears in it. However, when the author is known, a rule of life plus fifty is less demanding because the rights to all his works expire on the same date.

A final issue relevant to users' decision whether to engage in a search for corporate right holders is whether corporations possess all the data required to manage their rights under the revised rule. The analysis so far has assumed that they do. In reality corporations may have information on dates of production but not on authors. They may hold photographers' names but be unaware as to whether they are still alive. Some photographs may not carry any identifying marks. Corporations would presumably be willing to incur the expense of collecting and keeping identifying information if they could justify doing so in cost-benefit terms. The latter depends on the protection given to photographs under the amended law when this information is missing.

3. Fair dealing and publication³¹

The *Copyright Act* limits the power of right holders in special situations. There is a fair dealing limitation when works are used "fairly" for purposes of research, private study, criticism and news reporting. There are limitations that apply to *particular* uses of *certain types* of works. One example is the right to make a back-up copy of a computer program. There are also limitations that apply to *some users and some uses of all works*. E.g., educational institutions may make unauthorized copies of material or perform works under conditions that would otherwise constitute infringement.

The literature provides an efficiency rationale for such limitations on copyright. The most commonly cited rationale is that if transaction cost did not stand in the way, right holders would have consented to free use. If so, granting the exception gives users a benefit without imposing a cost on right holders. This is welfare enhancing.

A closely related argument is that right holders' agreement to allow use is implicit. Landes (1992) argues that writers value reviews that give them exposure. However, the public will only read reviews that it considers impartial. Impartiality is not likely when authors can put obstacles in the way of reviewers by invoking copyright in material inserted in the reviews. It would be inefficient to require reviewers to negotiate with authors. Doing so would undermine the value of reviews and result in less informed purchasing decisions. For that reason one must presume that if authors were asked, they would agree to have their works reviewed.

An alternative rationale is that *specific* uses by *identifiable* individuals generate a gain society that is considerably larger than the benefit accruing to these individuals. Absent a limitation on the right of authors, these persons would acquire copyrighted material until

³¹ The arguments in this section draw on Landes W.M, (1992), Copyright Protection of Letters, Diaries, and other Unpublished Works: An Economic Approach, Journal of Legal Studies, vol. XXI, 79-113.

their private benefit from additional use equals transaction cost plus royalties. At this point though, the benefits to society from further use would remain large. One wants to limit the right of authors in order to encourage such additional uses, e.g. for educational purposes.³²

Publication is relevant to the question whether right holders would have consented to the use of their work if transaction costs did not stand in the way of negotiations. Publication allows an inference that right holders would like their works to be used. It points to an intention to exploit them commercially, or donate them an institution where they produce a public benefit.

A similar intent is not revealed when a work has not been published. Therefore, there is no basis to extend the aforementioned limitations on copyright to unpublished works.

Then again, the mere absence of publication does not imply that the right holder is averse to all the uses of published works protected under the *Copyright Act*. For instance, a gift of unpublished material to a museum or an educational institution probably entails an implicit agreement to have that material used in a manner typical for that institution.

These considerations apply to all works including photographs. Although the unauthorized use of unpublished photographs may produce benefits to third parties, they seem insufficient compared to possible damages to right holders, to justify a fair dealing exception. This conclusion applies equally to works authored by Canadian and foreign photographers.

V. Sound Recordings

The person who undertakes the financial and technical arrangements necessary for first fixation of the sounds of a recording is called the maker. The maker of a sound recording is granted the following rights in relation to the sound recording or part thereof: 1) to publish it for the first time; 2) to reproduce it in any material form; and 3) to rent it out. The rights of the maker comprise the right to authorize the aforementioned acts. Recordings of works and compilations of sound recordings are protected as sound recordings.

The rights are conditional on nationality or residency requirements of the maker and on having first publication of a quantity sufficient to satisfy the reasonable demands of the public taking place in Canada, a Berne Convention, a Rome Convention country or, a WTO member country. The rights terminate 50 years from the calendar year-end of first fixation. Section 19(3) provides a 50-50 sharing of the remuneration between makers of sound recordings and performers.

³² See W.J. Gordon and R.G. Bone, Copyright, In Boeckaert and De Geest, Encyclopaedia of Law and Economics. In some sense, the fair dealing provision is akin to a subsidy granted by right holders to users and to the third parties who benefit from that use. Transaction costs explain why the potentially numerous beneficiaries cannot be forced to pay. It may be costly to identify them and impossible to ascertain how much they benefit from the work.

Section 19(1) of the *Copyright Act* grants performers and producers of sound recordings a right of equitable remuneration for the performance in public and the telecommunication (except for retransmission) of a published sound recording. The remuneration right gives performers and makers of sound recordings the opportunity to claim royalties from those who use their recordings for public performance or broadcast in Canada and in countries that abide by the Rome Convention. It does not allow them to control these uses.

In order gain title to a right of remuneration the maker of a sound recording must be a citizen of Canada or a citizen or permanent resident of a Rome Convention country at the date of first fixation. If the maker is a corporation it is entitled to remuneration if headquartered in one the aforementioned countries.

The US is not a member of the Rome Convention. It has ratified the WPPT but signatories of that treaty are not obliged to grant a right to remuneration for the broadcast of sound recordings. As of yet, the US has not amended its law to include a right of remuneration for the broadcast or public performance of sound recordings.

Because the WPPT provides a term of 50 years following publication, or failing publication within 50 years a period of 50 years from the year of fixation, it is possible to imagine a protection period of 99 years. This possibility arises if publication takes place in the 49th year after fixation.

Industry Canada has raised the following questions in regard to sound recordings:

- i. What is effect of extending the term of protection for makers of sound recordings?
- ii. Should a similar extension be granted to performances contained in these sound recordings?

Section III has addressed the issue of term extension for works in general. Under Canadian law, sound recordings have a shorter protection period than most works. They are protected for a period of 50 years from fixation. Adding 20 years of protection would contribute 2.3% to the present value of royalties under a 7% discount rate, assuming that the flow of royalties remains unchanged during the whole period.³³ Under identical assumptions, extending the protection period to 100 years would contribute a mere 3.0% to the present value. This, however, is true only if the royalty flow remains constant over time. When the annual royalties decline rapidly over time, as is typical, the increase in present value would be considerably smaller.

While such outcome is possible, it is highly unlikely. A recording with commercial potential is typically published soon after fixation. Industry members point out that recordings are published several years after fixation in rare instances. This happens when

³³ This is a higher percentage than the 0.16% found in section III (of this study...). The reason is that in the case of sound recordings one adds 20 years to a protection period that is currently limited to 50 years. In section III the calculations were made assuming that term extension would prolong the duration of protection from 90 to 110 years.

works originally thought to be lacking profit potential become commercially viable. This can occur in response to the rising popularity of a performer. Delays in publication also come about when it is not commercially prudent to release as many works as the artists is contractually committed to produce within a given period. In such case, however, the delay between fixation and publication remains relatively short.

Overall, it appears that the change in protection term required by the WPPT would affect neither producers nor users.

In the view of some industry members, common sense demands that the extension required by the WPPT for makers also be granted to performances. They argue that prolonging the protection of performances would have the advantage of reducing administration cost. This is not a strong argument, considering that collective management keeps administration costs in check. The argument becomes weaker yet when one considers that recordings have a relatively large number of right holders whose rights expire at dates that can be far apart. In the case of sound recordings, stakeholders are numerous and various components of a work may have been created at different times. The implication is that extension of the protection term for makers does not warrant a similar extension for performances.³⁴

VI. The protection of rights management information (RMI)

1. The WIPO treaties

Rights management information (RMI) is information embedded in, or affixed to copyrighted material. It identifies the persons who hold rights to that material. It frequently specifies conditions of use of a work. RMI often interacts with technical devices that control access, track usage, and handle payments.

The WCT and the WPPT call for adequate and effective legal measures to protect RMI that identifies stakeholders and RMI that relates to conditions of use against tampering. The goal is to prevent the removal or alteration of RMI without authority. The required measures must also target the distribution, import for distribution, communication and making available to the public without authority of works, copies of works, performances, copies of performances, phonograms, knowing that RMI has been removed or altered without authority.

The obligation to adopt legal measures applies only to acts that induce, enable, facilitate, conceal infringement of the rights covered by the treaties or by the Berne Convention (WCT only) or, with respect to civil remedies to acts where there is reasonable ground to know that they would have such effect.

Treaty obligations apply whether or not the RMI is accurate or relevant to the jurisdiction where tampering takes place, or where material that has been tampered with is distributed.

³⁴ It does not imply the absence of other reasons for granting such extension.

This section examines the following questions:

- 1) How do the digital technologies affect the so-called “balance of power” between holders of rights and users of copyrighted works?³⁵
- 2) What types of information should be protected against tampering?
- 3) Who should benefit from exceptions to anti-tampering rules?
- 4) What remedies against tampering are sensible from an economic perspective?

Questions 1 and 4 are examined from a general perspective. Analysis of questions 2 and 3 focuses more directly on problems faced by libraries, museums and archives (LAMs).

2. Balance of power shifts³⁶

The emergence of digital technologies, the internet in particular, has lowered the cost of copying and distributing works of authorship. It has become easier to bypass some providers of complementary inputs. It is not clear though, whether the new technologies have expanded the portion of the societal benefits accruing to authors or the part captured by consumers of copyrighted material.

Supporters of strong legal measures against tampering argue that the portion secured by authors has shrunk because the new technologies facilitate the illicit dissemination of protected material. They fear mass infringement and plead for extra protection to strengthen the shield provided by copyright law and technical anti-circumvention means.

Opponents of strong measures support wide-ranging exceptions to anti-tampering legislation. They claim that on-line contracting and technical devices are making fair dealing exceptions ineffective, tilting the balance of power in favor of copyright holders. In their view, adoption of strong legal measures would add to the prejudice already suffered by users.

Digital technologies have also increased sellers’ capacity to engage in differential pricing. This affects the sharing of benefits between producers and users of copyrighted materials. The new technologies enhance sellers’ capability to unbundle rights typically sold as bundles in the analogue world. For example, CD’s cannot be distributed in a cost-effective way unless they contain a minimum number of songs. Sellers of CDs do not have the means to monitor the number of uses or to verify whether the recording is lent to others. They cannot ascertain in how many venues it is played. Therefore, sellers have no choice but to sell a “bundle” of rights that includes the right to unlimited listening and the right to

³⁵ The so-called “balance of power” issue has been raised in reports written in response to the “Consultation Paper on Digital Copyright Issues”. See Consultation Paper on Digital Copyright Issues, June 22, 2001 at [http://strategis.ic.gc.ca/epic/internet/incrp-prda.nsf/vwapj/digital.pdf/\\$FILE/digital.pdf](http://strategis.ic.gc.ca/epic/internet/incrp-prda.nsf/vwapj/digital.pdf/$FILE/digital.pdf). Several reports have argued that the shift in the “balance of power” carries implications with respect exceptions to legal measures protecting RMI.

³⁶ Publishers e.g. are alleged to lose their traditional role. They may become more valuable in a role of evaluators. See R.E. Caves, *Creative Industries: Contracts between Art and Commerce*, Harvard University Press, Cambridge, Massachusetts and London, England, 2000.

lend the recording. On-line retailers by contrast have the option of selling a more limited range of rights. They can unbundle the right to copy from the right to transmit. They can offer a choice between use-based payments, lump sum payments, and payments linked to the number of computers at licensees' premises. Users who derive the greatest benefit from a work are most likely to acquire rights to the widest array of uses and make the largest payments.

But, how does the increased ability to price differentially and tailor products to individual preferences affect right holders' profits? Much of the literature argues that a seller endowed with the capacity to engage in differential pricing earns higher profits than one who must set a uniform price. This is certainly true when the seller is a monopolist. However, providers of copyrighted material are not endowed with monopoly power. Their works compete with other works. This makes for a more complex relationship between profitability and the capacity to engage in differential pricing. One can no longer maintain that an enhanced ability to price differentially generates higher profits. The reason is that each seller reaps a benefit from acquiring a capacity to engage in discriminatory pricing, but is affected adversely when rival sellers acquire the same capacity.³⁷

Unfortunately, there no empirical study that shows which of the aforementioned effects dominates. The question how digital technologies have shifted the balance of power remains unresolved.³⁸

It is important to emphasize though that an asymmetric sharing of the gains attributable to digital technologies does not entail that if consumers have lost, right holders must have gained, or vice versa. The increase in the pie appears large enough to allow an inference that both have gained.

More importantly, there is no economic basis for arguing that if one side has lost, policy makers should redress the "imbalance". Indeed, the new technologies may affect incentives to create and disseminate in a way that justifies granting a greater slice of the pie to creators or to users. Furthermore, maneuverings with exceptions to anti-tampering legislation are hardly appropriate to achieve redress. If the new technologies justify a realignment of incentives, the shift should be accomplished by amending the scope of protection given by copyright, not by manipulating mechanisms that facilitate the assertion of rights. In order to justify exceptions to an anti-tampering rule one has to show that the rule in question encumbers the exercise of rights.³⁹

³⁷ Holmes (1989) shows that sellers in a 2-firm industry producing a differentiated good could be better off under uniform pricing than under third-degree price discrimination.

³⁸ Recent research shows that price discrimination is more likely to increase the profits of all sellers in an industry when competition is intense. Armstrong M. and J. Vickers, *Competitive Price Discrimination*, *Rand J. of Economics*, vol.32, no 4, Winter 2001, 579-605. Because works of authorship often have a great many substitutes, it is reasonable to draw the inference that the increased ability to discriminate increases the rewards of copyright holders.

³⁹ Also, a lack of effectiveness of technical measures that protect RMI does not make it economically rational to provide a layer of legal protection. The latter requires that enforcement of the legal rule not be too costly compared to the cost of a market based mechanism. Introduction of legal measures lowers right holders' willingness to pay for technological means. The cost of enforcing legal measures is borne to a significant

3. Types of information and legal measures

Industry Canada has asked that the report consider the following options:

- Option 1: Adoption of legal measures to protect information that identifies the work, the owner of the work, and the owner of any right in the work.
- Option 2: The protected information includes the terms and conditions of use.
- Option 3: The same as option 2 but protection extends to information that allows right holders to track use of the material.

A further differentiation is possible between information embedded by right holders and information embedded by others. Another distinction is between information that is truthful and relevant, and information that is wrong and/or inapplicable.

a) An economic perspective

Copyright holders who embed RMI in a product do so in order to enhance their ability to maximize economic returns. For that reason alone, the starting premise must be that tampering lowers the expected profit of those who have embedded the RMI. This is true for all types of RMI.⁴⁰

An economic rationale for granting exceptions to an anti-tampering rule must therefore be based on at least one of the following claims: a) that the exceptions increase the value of the material, if not necessarily the portion of the value accruing to those who have embedded it; b) that the exceptions redistribute benefits between producers and consumers in ways that accord better with the objectives of copyright law.

These conditions are necessary, not sufficient. The reason is that tampering carries the risk of accidental removal or addition of information. The latter may perturb the delicate balance of incentives that copyright law tries to achieve.

The most frequently cited justifications for exceptions to anti-tampering rules are: 1) The RMI contains wrong information; 2) some or all conditions of use contained in the RMI are not applicable to Canada⁴¹; and 3) manipulation of the RMI is necessary for internal management purposes.

Whether manipulation of RMI should be allowed in these circumstances depends on the following: 1) How frequent is the circumstance? 2) What is the economic cost of its

extent by society whereas the cost of technical means is borne entirely by the persons who seek to protect their works.

⁴⁰ This, however, does not imply that all types of RMI are equally valuable. Some information may not enhance value in any significant way. It may have been implanted only because the extra cost of doing so was negligible once it was decided to embed the more valuable RMI.

⁴¹ E.g. RMI that relates to public lending.

occurrence? 3) What alternatives besides tampering are available to remove the circumstance?

This section addresses these questions from the perspective of libraries, archives and museums (LAMs). It asks how frequently LAMs encounter wrong or inapplicable information. Whether they can correct such RMI themselves and, if not, what alternatives are open to them? What economic costs flow from not making the correction?⁴²

From an economic standpoint, manipulation of RMI by LAMs is more easily justified when the circumstance is more frequent, when prohibiting manipulation of RMI carries a greater cost in terms of less creation and dissemination of works, and when alternatives to manipulation of RMI by LAMs are few or costly.

b) Erroneous information on stakeholders and conditions of use

There are many ways in which RMI could be off the mark. Stakeholders could be incorrectly identified, public domain works could be coded as if protected, the date of creation could be erroneous, and there could be contradictions in the terms of use.

Are such circumstances more likely to be encountered by LAMs in regard to information about stakeholders than in regard to information about conditions of use?

The responses that libraries and archives give to this question stress that information identifying a work is often wrong or incomplete. As well, the information appearing on the package sometimes contradicts the information shown on the work itself. While this applies primarily to works distributed in physical form- books, video and sound recordings- respondents do not expect information embedded in digital form to be more accurate or complete.

Libraries and archives also share the view that erroneous RMI about conditions of use is more likely to be incorrect than information identifying the work and the stakeholders.

LAMs indicate that they are prepared to put into circulation improperly or incompletely identified works. They also point out that they do not refrain from making legitimate uses that the RMI disallows. Libraries often negotiate with right holders in order to broaden the scope of uses authorized by standard licensing agreements. They seek permission to modify the RMI to make users aware of the customized conditions of use. However, they do not claim that the only means to convey such information to users is by changing the RMI.

Overall then, it does not look as if prohibiting the manipulation of RMI that identifies stakeholders and describes conditions of use will generate significant losses in terms of dissemination of copyrighted material.

Some respondents stress the fact that RMI may interfere with the internal management of collections. This problem arises more frequently when third parties rather than right holders

⁴² A summary of the positions taken by LAMs in regard to these issues appears as Appendix 4 to this report.

embed RMI. RMI embedded by third parties is less likely to perturb the balance of incentives created by copyright law. This suggests that removal of such RMI by LAMs should be exempted from anti-tampering legislation.

Consider now the risks that flow from exemptions to anti-tampering rules. One cannot discount the risk that prospective tamperers will be wrong in concluding that a piece of RMI is erroneous or inapplicable. Even when they are not, there is no guarantee that the alternate RMI they will put in place will be accurate or complete. Also, establishing whether the conditions of use are relevant may require expert knowledge in the matters of copyright and commercial law that potential tamperers do not possess. And, there is no reason to presume that the economic loss from removing accurate or relevant information is less important than the benefit from correcting inappropriate information. Finally one must also consider the moral hazard issue. Allowing the "repair" of information by whoever concludes that RMI is false or inapplicable is likely to invite abuse.⁴³

Another issue is whether LAMs have the means to address problems of inappropriate RMI without resorting to tampering. The common practice in the physical world - as reported by one librarian - is to put stickers with corrected information on the material itself. The sticker may have on it both the original and the corrected information. A priori there is reason to believe that a similar approach could be adopted with respect to information embedded electronically. It is difficult to justify manipulation of existing RMI if LAM's can solve their problem by adding information without removing or altering the existing RMI.⁴⁴

These considerations remove the economic case for granting LAMs sweeping exemptions from legislation against the tampering with RMI that identifies stakeholders and specifies conditions of use. However, it is sensible to allow the manipulation of RMI embedded by third parties when it interferes with the management of collections.⁴⁵

4. Tracking information.

Tracking information allows the detection of unauthorized uses. It also generates a wealth of information about a user's interests and habits. That information helps sellers fine-tune business strategies.

The collection and commercialization of tracking information is a matter of concern because it may violate users' privacy. If one accepts the view that the protection of privacy is a concern that trumps economic considerations then, clearly, one should allow the removal of such RMI.

⁴³ Although one may think that the risk is lower in the case of LAMs than for private persons.

⁴⁴ The case for allowing manipulation of RMI is weakened further if such manipulation can be done on behalf of LAMs by "certified" third parties.

⁴⁵ This assumes that it is possible to tamper with one piece of information while leaving other pieces untouched.

Interestingly, the removal of tracking codes can also be justified on economic grounds. When sellers embed tracking information they are in fact offering a tied exchange, a form of barter. They propose a product in exchange of money *and* tracking information. One must assume that such tying increases the value of the transaction to the seller, i.e. the party imposing the bundle. This does not entail, however, that tracking information also produces more value for buyers. And, when buyers lose more than sellers gain, there is a loss in economic efficiency. From an economic perspective then, there is no apparent reason to protect tracking information.

Should one conclude therefore that users must be allowed to remove tracking information? A risk one must pay heed to is that removal of tracking codes could lead - either by mistake or by design - to the removal of other information. A preferred approach is to require that the parties who embed tracking codes inform users that utilization of a work is monitored or could be monitored, and demand that these parties provide users with a very simple way to disable the tracking mechanism.⁴⁶ Absence of such mechanism should be sufficient to allow the removal or disabling of tracking information.

5. Specialized organizations

LAMs argue that they should be permitted to carry out the circumventions and manipulations of RMI they deem necessary to exercise rights they enjoy under fair dealing provisions. They also maintain that authorizations should extend to the specialized firms they hire to perform these tasks. LAMs worry that uses guaranteed under sections 29 to 30.5 of the *Copyright Act* will become theoretical if authorization is not granted.

LAMs recognize the risk that material stripped of identifying information and made available for consultation will be disseminated on the Internet. They also acknowledge that such dissemination may prejudice copyright holders. However, they do not offer a practical solution to this problem.

While not rejecting the use of specialized certifiers to manipulate RMI, most LAM's that have been consulted question the practicality of such arrangement. Some believe that it is unworkable because certifiers would be swamped by requests from a great many users. Others consider that it would be difficult to implement. A few maintain that it would be worthwhile to consider hybrid arrangements under which selected non-profit institutions manipulate specific types of RMI while specialized third parties deal with other types.

A building block of such organization may already be coming into existence in the form of identifier systems. Such system operates on the basis of unique numbers that attach to copyrighted works. A number is used to access a database to retrieve information about a work, the persons who hold rights to it, and possibly, conditions of use.

In order to link such system to an organization with the capacity to correct false or inappropriate RMI, the following is needed: 1) Resources to quickly check the truthfulness

⁴⁶ Sellers could offer users the option of access with tracking at a lower price than access without tracking.

and pertinence of RMI that pertains to a work; 2) trouble-free and inexpensive access to the organization by all persons who claim to have found false or non-pertinent RMI, and by persons who seek removal of RMI because it interferes with fair dealing access⁴⁷; 3) empowerment of the organization to correct and remove RMI; and 4) development of a mechanism for speedy delivery of material with RMI (and possibly technical protection measures) removed or changed.

Persons who hold rights to works included in the database have an incentive to authorize corrective manipulation by such organization. The reason is that doing so provides users a measure of comfort that the RMI is accurate and pertinent. Also, the organization may seek authorizations because it wants to provide a service akin to certification in the area of electronic commerce.⁴⁸

In a recent paper, Burk and Cohen recommend a two-pronged approach to regulate fair use access.⁴⁹ Their approach requires the design of a rights management system that detects a range of fair uses and gives limited access when fair use is detected. It is a system complemented by inputs from a trusted external party. The trusted party "would hold the keys to technologically protected works and could issue keys to applicants via an online procedure". Burk and Cohen hold that a trusted party is necessary because a purely computer-oriented system could not possibly anticipate "the range of access privileges that may be appropriate for fair uses of a particular work".

6. Remedies

Determining the best combination of remedies is, by and large, a legal matter. Both the feasibility and the desirability of alternative choices are circumscribed by generally applicable legal principles, by the possibility that tampering with RMI could fall under the ambit of other laws and possibly, by procedural matters. The contribution economic analysis can make is to provide some evaluative criteria.

The paramount consideration from an economic perspective is that RMI has no intrinsic value; its worth derives solely from its potential to enhance the value of copyrightable works. For that reason, the selection of legal measures against tampering must ultimately derive from their impact on creation and dissemination.

One objective is to maximize the authorized utilization of copyrighted works.⁵⁰ Different measures achieve this goal to various degrees. They also entail different costs, specifically,

⁴⁷ Such access is also necessary to encourage a user who comes across false RMI to report that finding. In the absence of a convenient channel to convey the information, the user will just let things go by. This would deprive third parties from the benefit of a RMI correction.

⁴⁸ The organization could also serve as a digital transfer station to download material in unencrypted form, admittance being restricted to parties that benefit from fair dealing exceptions.

⁴⁹ Burk D.L. and J.E. Cohen, Fair Use Infrastructure for Rights Management Systems, Harvard Journal of Law and Technology, Vol.15, number 1, Fall 2001, 41-74.

⁵⁰ This is not the same as minimizing unauthorized uses.

the cost of enforcement and the cost of precautions to avoid accidental removal of RMI. The optimal combination of legal measures is that which achieves the "best" balance between minimizing these costs and maximizing authorized uses.

A second consideration bears on the relationship between legal means that target infringement and legal means directed at tampering that has already led or could lead to infringement. If a chosen remedy is best against a particular form of infringement because it provides the optimal amount of deterrence, it cannot be optimal to apply a more severe measure to tampering that *may* lead or may have led to an *identical* infringement.

This does not mean that measures that target a single instance of tampering should be less severe than measures aimed at a single instance of infringement. What makes a single instance of tampering in the digital environment potentially more injurious than a single instance of infringement is the risk of wide dissemination of copies that have been tampered with. This could lead to a great many unauthorized uses. The implication is that tampering in the digital environment carries a risk of prejudice to right holders similar to the prejudice caused by commercial distribution.

Economic analysis of remedies must focus on incentives, i.e. on their likely impact on future behavior by users, copyright holders, and third parties. Remedies affect the behavior of stakeholders at several margins. They determine the precautions taken to avoid accidental tampering, they affect the nature of the technical measures taken by right holders to prevent tampering, they sway incentives to engage in deliberate tampering or deal with corrupted material, they influence decisions whether or not to prosecute.

The law and economics literature cites several circumstances that justify public prosecution of offences under criminal law. They include the following:⁵¹ 1) The victim may not have the resources to prosecute; 2) the injury may be important but so diffused among victims that no individual victim has a sufficient economic incentive to prosecute; 3) the offender cannot pay damages and consequently, the financial incentive of private persons to prosecute is lacking; and 4) there may be an intent to produce injury but no actual injury has yet occurred.

To address the question whether criminal measures are in order one must inquire whether the aforementioned circumstances are more or less likely in a case of tampering than in a case of infringement. If they are less likely, there is reason to impart a stronger slant towards civil remedies when one targets tampering. If they are more likely, the balance should tilt more heavily in the other direction.

Consider first the conditions under which tampering may occur: 1) Tampering may be accidental while making an authorized use of a work⁵²; 2) it may be accidental while making an unauthorized use; 3) it may be deliberate while making an authorized use; 4) it

⁵¹ David D. Friedman, "Law's Order; What Economics has to Do with Law and Why it Matters", Princeton University Press, Princeton New Jersey, 2000. Also, see Robert Cooter and Thomas Uhlen, Law and Economics, Addison-Wesley, Second Edition, 1995.

⁵² Watermarks could be damaged in the process of compressing and decompressing files.

may be deliberate while making an unauthorized use; and 5) it may be deliberate while making no use of the work.

Also, one person may have accidentally tampered and deliberately made the material available on-line; another may have deliberately tampered for own use and accidentally put the material stripped of its RMI on-line.

The *Copyright Act* entitles a right holder to civil remedies that include injunctions, damages and accounts of profits against persons who infringe. However, a plaintiff is not entitled to any remedy other than an injunction in respect of the infringement if the defendant proves that, at the date of the infringement, he was not aware and had no reasonable ground for suspecting that copyright subsisted in the work.⁵³ However, this defense is not available when the copyright has been registered.⁵⁴ Damages tend to be lower when infringement is innocent than when it is unmistakably intentional.⁵⁵ The *Copyright Act* also makes criminal sanctions available when a person knowingly sells or rents an infringing copy, makes an infringing copy for sale or rental, imports or exhibits an infringing copy.⁵⁶ Criminal proceedings do not bar civil action.

The severity of sanctions clearly depends on whether the infringing party was aware of its violation, and on whether the violation served a commercial objective.

The severity of remedies affects economic welfare along two dimensions. When sanctions become harsher, users are increasingly willing to incur costs to ascertain the ownership of copyrights in order to avoid infringing. Because the probability of infringement cannot be reduced to zero, application of more severe sanctions also reduces the use of works: Both effects tend to lower societal welfare. At the same time though, increased sanctions can enhance authors' capacity to derive income from creative effort. When they do, they provide a benefit to society benefits in the form of access to a greater number of works.

It is important to consider, however, that the advantage copyright holders derive from a lessening of infringements, or from reducing some types of infringements, is not necessarily a significant one. And, if the benefit to right holders is minor, there is no reason to dampen the use of works, or generate significant costs as a result of precautions taken by users.

What is interesting in this regard is that registration can serve as a marker of right holders' expected losses from infringement. It can point to the value that right holders attach to the deterrence of infringement. Because registration is inexpensive, and because the simple act of registering gives right holders a better chance of obtaining damages, one may infer from

⁵³ *Copyright Act*, s. 39(1)

⁵⁴ *Copyright Act*, s. 39(2)

⁵⁵ S.Handa, *Copyright Law in Canada*, Buttersworth Canada Ltd.2002, page 269.

⁵⁶ *Copyright Act*, s. 42(1)

the absence of registration that right holders do not expect to incur significant losses as a result of infringement, or that they do not care greatly about deterring it.⁵⁷

By linking the expected severity of remedies to registration, section 39(2) of the *Copyright Act*, makes it possible to draw inferences about the importance right holders assign to the prevention of infringement from their decisions in regard to registration. This may explain why subsection 39(1) is not applicable when a registered work has been infringed.

Consider now the criminal provisions, starting with a situation where an infringing copy has been made but not distributed. If no economic losses have been suffered yet, private parties have little incentive to bring suit. Mere reliance on confiscation of the infringing copy is ineffective because the potential rewards from commercial exploitation are large compared to the value of the infringing copy.⁵⁸ More importantly, if injunctions or damages were the only remedy, deliberate copying for commercial purposes would likely have a positive expected payoff. One clearly faces a situation where the last of the aforementioned circumstances arises.

One can also make the case that reliance on mere civil remedies is insufficient when some commercial exploitation has already taken place. The reason is that users who infringe for commercial reasons are likely to infringe the works of many right holders. If so, the private expected gains from suing are likely to be much smaller than the gains to society.⁵⁹ But then, private action is insufficient to provide adequate deterrence, which could be corrected if action is taken by the state.

These observations carry several implications in terms of anti-tampering rules. Consider first the case of innocent manipulation of RMI. It is reasonable to apply the same remedies as in a case of infringement, i.e. to entitle the right holder to injunctions and damages when tampering does not serve a commercial purpose. Remedies should be limited to injunctions when the defendant proves absence of intent to engage in illegal tampering, and when the material that has been tampered with is not disseminated.

Such limitation is not desirable when the work has been registered, the more so when the RMI shows that it has been registered.

As indicated, tampering with digital material carries the risk of illegal dissemination and wide use of contaminated material. One must assume, however, that the existence of such risk was known to copyright holders when they decided to embed RMI but did not register their works. Therefore, it makes sense to treat tampering with RMI embedded in registered works differently from tampering with unregistered works.

⁵⁷ Because the requirements in regard to originality are low and because copyright does not require registration one must assume that there exists a huge amount of material of no economic value that could be infringed.

⁵⁸ Injunctions are probably ineffective unless the offending party has infringed in the past and the law provides extra punishment for repeat offenders.

⁵⁹ The party initiating such action creates a benefit for other right holders but receives no compensation for it.

Consider next the case of deliberate tinkering with RMI for commercial purposes, or the distribution for commercial purposes of material that has been tampered with. Again one can conclude that the reasons that justify the option of criminal remedies against commercial infringement apply equally in instances of commercial tampering or dealings in material that has been tampered with.

The case of tampering for non-commercial purposes is not as easily dealt with. The problem is that in a digital environment dissemination can be widespread even when the person who tampers has no commercial objective. Also, in many instances of non-commercial dissemination of contaminated works, the offending party may be an individual who does not have the resources to pay damages. In such case the prospect of civil action by a private plaintiff may not act as an effective deterrent against tampering. Simple cost-benefit analysis may dictate to the injured party to refrain from taking action. Indeed, the injured party would incur cost of legal proceedings immediately while chances to collect damages in the future would remain slim.

A potential answer to this problem is to provide administrative monetary penalties in situations where a person tampers with copyrighted material for non-commercial reasons and disseminates that material.⁶⁰ The penalty would be payable to the Crown and be recoverable from future earnings of the violator. The severity of the penalty would depend on the amount of injury, and on whether the violator intended to produce injury.

The legal treatment of accidental removal or alteration of RMI is of particular concern to LAMs. These organizations stress the risk of accidental tampering when extracting for legitimate purposes segments of digital material embedded in a larger whole. They claim that such accidental removal of RMI should not be subject to civil or criminal remedies. One institution argues that Canada should consider a provision similar to section 1203(5) of the *Digital Millennium Copyright Act*. US law provides for a reduction of awards and damages for innocent violations and orders courts to remit damages in any case where a library, archive, or educational institution sustains the burden of proving that it was not aware that its act constituted a violation.⁶¹ Such provision is sound on economic grounds.

VII. Final Remarks

This report has considered how extension of the term of protection to life of the author plus seventy years would affect incentives to create and disseminate works in Canada. It has

⁶⁰ Sections 74.1 and 79(3.1) of the *Competition Act* provide such remedies.

⁶¹ Section 1203(5) "Innocent violations. (A) general- The court in its discretion may reduce or remit the total award of damages in any case in which the violator sustains the burden of proving, and the court finds, that the violator was not aware and had no reason to believe that its act constituted a violation. (b) Nonprofit Library, Archives or Educational Institutions- In the case of a non-profit library archives or educational institution, the court shall remit damages in any case in which the library, archives, or educational institution sustains the burden of proving, and the court finds, that the library, archives, or educational institution was not aware and had no reason to believe that its acts constituted a violation."

examined how extension affects the external balance of copyright payments, and whether there are arguments that favor of harmonization of the term of protection in Canada with the term granted in other countries.

The report finds that a twenty-year extension would have an insignificant effect on creative effort. Because Canada is a net importer copyrighted material, there may be a minor adverse effect on the external balance of royalty flows. It also finds that the case for harmonizing the protection term with the term prevailing in countries that are Canada's major trading partners is weak at best.

Adoption of a rule under which the term of protection of photographs belonging to corporations not owned by photographers equals life of author plus fifty years should not entail significant additional transaction costs for users. The report also concludes that extending the term for makers of sound recordings does not justify granting the same extension to performances in these recordings.

With respect to rights management information it is difficult to make the case that libraries museums and archives should be given wide-ranging exemptions from anti-tampering provisions. This conclusion holds equally for information concerning stakeholders and information on conditions of use. However, it is reasonable to make an exception for the manipulation of the codes that interfere with the functions of LAMs such as cataloguing. Also, very little protection, if any, should be given to tracking information.

The report supports the formation of specialized organizations that provide keys to works and are empowered to manipulate rights management information.

Finally, the report concludes that remedies against tampering should track the remedies that apply to infringements and that administrative monetary penalties should be considered as a remedy against the non-commercial dissemination of material that contains RMI that has been tampered with.

Appendix 1

Incentives and discount rates

The present value of a dollar received “t” years from now is equal to the amount one must invest today in order to obtain a dollar in “t” years. Clearly, that amount depends on the prevailing interest rate. The value today of a dollar collected after t years is $\$1.00/(1+i)^t$, where “i” is the prevailing interest rate.⁶² Therefore, an income stream of 1 dollar to be collected in t years, plus 2-dollars to be collected after “t+1” years, plus 1 dollar to be received after “t+2” years has a present value equal to $[\$1/(1+i)^t] + [\$2/(1+i)^{t+1}] + [\$1/(1+i)^{t+2}]$.

The process that converts a future income into present value is called discounting. The expected present value of a work is determined by discounting the difference between the present and expected future revenues derived from the work and the costs of producing it.

Term extension impacts on the incentives to engage in creative effort because it influences the portion of expected present value that relies on the enforcement of copyrights. The magnitude of the impact depends on the applicable discount rate and on the difference between revenue and cost during the extra protection period.

Consider an extension of twenty years that would prolong the protection term to life plus seventy years. Such extension would confer a protection period of 110 years to a work authored by a forty-year-old Canadian with a life expectancy of 80 years.

To determine the effect on present value one must choose a discount rate. Unfortunately, economists do not have a ready-made formula that tells them which rate to use in a specific situation. Therefore, they resort to sensitivity analysis, making use of several rates that appear “reasonable” on an *a priori* basis. This allows them to explore the robustness of their conclusions to variations in the discount rate.

Higher discount rates are used when the magnitude of future costs and revenues is less predictable. This fits the view that most people, when offered the option between a certain income and a probabilistic income with the same expected value, will choose the former. It suggests that a fairly high discount rate is appropriate when investigating the effects on creative effort.⁶³

⁶² This formula assumes compound interest. The term $1/(1+i)$ is called the discount factor.

⁶³ “There is great uncertainty about how consumers will value a newly produced creative product, short of actually producing the good and placing it before them..... The problem worsens when costs are sunk, as they usually are, and cannot be retrieved once a disaster is evident” R.E.Caves, *Creative Industries: Contracts between Art and Commerce*, Harvard University Press, Cambridge MA and London, England, 2000, 454 pages.

The present value of an annuity of one dollar received during T years is equal to $\frac{1}{i} \left[1 - \left(\frac{1}{1+i} \right)^T \right]$, where "i" is the discount rate. Therefore the relative increase in the present value of 1 dollar received annually resulting from an extension of the term of

protection from year 91 to year 110 is equal to $\frac{\frac{1}{i} \left[1 - \left(\frac{1}{1+i} \right)^{110} \right] - \frac{1}{i} \left[1 - \left(\frac{1}{1+i} \right)^{91} \right]}{\frac{1}{i} \left[1 - \left(\frac{1}{1+i} \right)^{90} \right]}$.

The sensitivity of the change in present value to changes in the discount rate is shown below.

For an author who lives another 40 years⁶⁴

Discount Rate	Percentage gain present value
4%	1.52%
7%	0.16%
10%	0.01%

For an author who lives another 25 years

Discount Rate	Percentage gain present value
4%	2.44%
7%	0.42%
10%	0.06%

For an author who lives another 55 years

Discount Rate	Percentage gain present value
4%	0.86%
7%	0.05%

⁶⁴ Life expectancy for a 40-year old is 42.36 years for females and 37.42 for males. Source: Complete life table Canada at <http://www.statcan.ca/english/freepub/84-537-XIE/tables.htm>

10%

0.003%

Strictly speaking the formula shown above is not correct because it assumes that one is certain that rights in the work will subsist for 110 years. However, adopting a more complicated formula would not affect the conclusion that the impact of term extension on creative effort is insignificant.

Appendix 2

International flows of copyright payments

Consider Tables 1 and 2 that display Canadian service-based payments and receipts of copyright royalties (except software) for the period 1990-2000. It is apparent from the first row in Tables 1 and 2 that the amount of service-based outflows is considerably higher than the amount of inflows.⁶⁵

Statistics Canada does not provide data about the shares of payments and receipts by age class of the works. It is reasonable to assume that the share of royalty flows associated with "older works" is small. The calculations below assume that this share is the same for inflows as for outflows.

Under the assumption that the imbalance in service-based flows is equi-proportional across all age classes, one can infer how extension of the protection term will affect Canada's net royalty flows. The calculations point to some increase in net outflows.⁶⁶

Consider Tables 3 and 4 that display Canada's exports and imports of cultural goods.⁶⁷ In 1997 total export were 1,499 million dollars (see last row of Table 3) whereas imports were 4,748 million dollars (see last row of Table 4).

Because the numbers in Tables 3 and 4 much larger than those appearing in Tables 1 and 2, the question arises whether product-based inflows of royalties could make up for the increase in net outflows that derives from service-based trade.⁶⁸

⁶⁵ Although the latter show a marked increase during the nineties.

⁶⁶ This conclusion is true irrespective of whether Canada's trading partners operate under a national treatment or a reciprocity rule for the years of protection beyond the 50 years mandated by the Berne Convention.

⁶⁷ In all probability these goods are a good deal more "copyright intensive" than their humdrum counterparts.

⁶⁸ As indicated before, one need only look at exports because term extension in Canada does not affect product-based inflows of royalties.

TABLE 1

Receipts, payments, and balances¹=Receipts (millions of dollars)
 Commercial services by category=Copyrights and related rights

Area, country of control and affiliation	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total, commercial services	8	15	24	39	48	71	106	163	178	208	250
United States, all transactions	4	9	14	25	33	42	71	122	123	150	
United States, transactions with affiliates	3	5	4	9	18	29	51	59	89	102	
United States, transactions with others	1	5	9	16	15	12	21	63	35	48	
European Union countries, all transactions	3	4	7	9	10	17	23	29	38	38	
European Union countries, transactions with affiliates	2	4	0	0	0	0	0	0	0	1	
European Union countries, transactions with others	1	0	7	9	10	17	22	28	38	37	
Other countries, all transactions	1	2	3	5	5	12	12	13	17	19	
Other countries, transactions with affiliates	1	1	0	0	0	0	2	0	0	1	
Other countries, transactions with others	0	1	3	5	5	12	10	13	17	18	
Enterprises controlled in Canada, all transactions	2	0	2	2	2	19	38	94	74	109	
Enterprises controlled in Canada, transactions with affiliates	0	0	1	1	1	0	10	20	18	43	
Enterprises controlled in Canada, transactions with others	2	0	1	1	1	19	28	74	56	65	
Enterprises controlled in United States, all transactions	0	5	7	21	24	21	16	21	39	26	
Enterprises controlled in United States, transactions with affiliates	0	1	1	4	7	18	10	11	29	16	
Enterprises controlled in United States, transactions with others	0	4	6	17	16	3	6	10	10	10	
Enterprises controlled in other countries, all transactions	6	10	15	17	23	30	52	49	65	73	
Enterprises controlled in other countries, transactions with affiliates	5	9	3	4	10	11	33	29	42	44	
Enterprises controlled in other countries, transactions with others	1	1	13	13	13	19	19	20	23	28	
All countries, transactions with affiliates	6	10	4	9	18	30	53	59	89	104	
All countries, transactions with others	3	5	20	30	31	41	53	104	89	104	

Source: Statistics Canada

TABLE 2

Receipts, payments, and balances¹=Payments (millions of dollars)
Commercial services by category=Copyrights and related rights

Area, country of control and affiliation	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total, commercial services	109	139	175	179	260	212	275	353	427	410	437
United States, all transactions	92	101	136	140	219	186	232	293	361	385	
United States, transactions with affiliates	52	72	65	77	126	123	134	169	247	253	
United States, transactions with others	40	29	72	63	93	63	97	124	113	132	
European Union countries, all transactions	16	36	38	37	38	25	39	57	64	21	
European Union countries, transactions with affiliates	13	33	29	27	29	16	27	40	42	8	
European Union countries, transactions with others	3	3	8	10	9	8	12	17	23	13	
Other countries, all transactions	1	2	1	1	2	2	4	3	2	5	
Other countries, transactions with affiliates	0	1	0	0	1	1	3	1	0	0	
Other countries, transactions with others	1	1	1	1	1	1	1	2	2	5	
Enterprises controlled in Canada, all transactions	39	27	39	34	52	63	82	149	197	250	
Enterprises controlled in Canada, transactions with affiliates	0	0	0	0	0	26	7	44	106	138	
Enterprises controlled in Canada, transactions with others	39	27	39	34	52	37	75	105	91	112	
Enterprises controlled in United States, all transactions	18	23	29	34	35	101	22	44	49	46	
Enterprises controlled in United States, transactions with affiliates	18	22	23	26	27	97	20	37	45	39	
Enterprises controlled in United States, transactions with others	1	1	7	8	8	4	3	7	5	7	
Enterprises controlled in other countries, all transactions	51	89	106	111	172	49	171	160	181	114	
Enterprises controlled in other countries, transactions with affiliates	47	84	71	78	129	17	137	129	139	84	
Enterprises controlled in other countries, transactions with others	4	6	35	32	43	32	34	30	43	30	
All countries, transactions with affiliates	65	105	94	104	157	140	164	210	289	261	
All countries, transactions with others	44	33	81	74	103	73	111	143	138	150	

Source: Statistics Canada

In this regard, one must account for the fact that copyright receipts account for a small portion of the prices that foreign importers pay for Canadian cultural products. Assuming that they account for 8%-10% of the price paid by foreign importers implies that product-based inflows to Canadian right holders amounted to 120-150 million dollars in 1997.⁶⁹ This compares to total service-based outflows of 353 million dollars and service-based inflows of 163 million dollars in 1997.⁷⁰

The implication is as follows: If the US were the only country to abide by a national treatment rule for older works, and if older works accounted for a portion "x" of service-based inflows, the amount of receipts liable to be affected by term extension would be "x" times 41 millions dollars.⁷¹ Assuming that the same portion of royalties applies to older works for service-based outflows, means a potential increase in payments of "x" times 353 million dollars.⁷² The increase in service-based net outflows is therefore 312 million dollars multiplied by "x".⁷³

Consider now the effects from product-based inflows, i.e. the effect resulting from the export of products that contain copyrighted material.⁷⁴ If one assumes that "older works" are equally represented among works incorporated into exported cultural products as in service-based trade, it follows that one should expect an increase in product-based inflows equal to "x" times 120-150 million dollars.

Thus, the increase in net outflows of royalties from service-based transactions exceeds the increase in inflows from goods-based transactions by an amount equal to x times 162-192 million 1997 dollars.⁷⁵ If the "older" works account for 3% of use of all copyrighted works, and if royalties paid for "older works" are on average half as high as royalties for copyrighted works in general, term extension in 1997 would have increased net Canadian outflows by 2.77- 2.43 million dollars annually.⁷⁶

The numbers would remain substantially the same if Canada adopted a reciprocity rule for the extra years of protection. The reason is that Canada's cultural services and merchandise trade with countries that abide by national treatment or reciprocity rules swamps its cultural trade with other countries.

⁶⁹ 120 is 8% of 1,499; 150 is 10% of 1,499.

⁷⁰ See row 1 in tables 1 and 2 for the year 1997. Because, the latest year for which product-based data are available is 1997, we also use service-based flows for the year 1997.

⁷¹This is the difference between total service-based inflows (163 million dollars) and the inflows originating in the US (122 million dollars). See rows 1 and 2 of table 1 in the column 1997.

⁷² Row 1 of table 2 column 1997.

⁷³ 312=353-41.

⁷⁴ Recall that product-based outflows are unaffected by extension of term protection in Canada.

⁷⁵ 162= 312-150 and 192= 312-120.

⁷⁶ 2.43= 50% of 3% of 162 million dollars.

Because of limitations on data availability, the calculations were based on 1997 numbers. The usual caveats apply to inferences drawn from these numbers for effects expected to occur in later years.

A few additional words of caution are appropriate. The numbers that appear in Tables 1 to 4 are at best rough indications of direct and indirect copyright flows. Here's why. Consider first the payments made via collection societies. Canadian collectives classify their payments to Canadian agents as payments to residents rather than to foreigners. However, the agents may represent foreigners. Similarly, not all monies received by Canadian collectives from foreign users via foreign collectives find their way to the pockets of Canadian right holders.

Similar issues arise in the case of good-based flows. Consider the following possibilities: A New York-based label contracts with a Canadian plant to press CDs that contains music composed by an individual who resides in a third country. The CDs are exported from Canada for sale in the US. There is neither an inflow of royalties to Canada nor an outflow from Canada. Yet, an export of a cultural good is registered. A different situation arises when a Canadian publisher contracts with a plant in India to print a book written by a Canadian author. The book is imported for sale to Canadian readers. Trade statistics show the import of a cultural good. However, the transaction is not accompanied by an outflow of royalties. A third circumstance is where 100 copies of the aforementioned book are shipped to Canada and 1000 copies are shipped directly from India to US wholesalers. Trade statistics now register an import of 100 books but there is an implicit inflow of royalties for the 1000 copies shipped to the US when the local wholesaler issues a cheque to the Canadian publisher.

TABLE 3

Canada's Exports of Selected Cultural Goods, \$'000

	1991	1992	1993	1994	1995	1996	1997	
							value	per cent
Print and Music	582,191	787,229	976,457	1,015,049	934,426	1,038,415	929,756	62.0
% of total	78.6	81.4	77.5	75.3	70.4	69.1	62.0	
Books & printing services	281,095	364,204	441,613	449,143	247,321	270,198	332,595	22.2
Newspapers, periodicals	130,483	142,732	209,402	181,078	203,746	187,348	172,277	11.5
Other written material	11,685	13,614	18,015	26,175	24,843	30,688	32,411	2.2
Music, video, software & other recordings	158,760	266,466	307,017	358,393	457,928	549,959	391,561	26.1
Printed music	168	213	410	260	588	222	912	
Other Selected Cultural Goods	158,439	179,385	283,680	332,803	392,477	463,373	569,961	38.0
% of total	21.4	18.6	22.5	24.7	29.6	30.9	38.0	
Visual art	39,966	39,747	50,611	41,148	44,670	45,318	59,726	4.0
Architectural plans	3,082	3,728	4,226	7,473	4,261	3,923	12,365	0.8
Design-related goods	24,205	27,404	34,350	54,224	73,270	95,787	123,588	8.2
Advertising material	62,632	68,160	97,055	127,883	199,381	219,011	258,225	17.2
Photographs & mass-produced art	28,554	40,346	97,438	102,075	70,895	99,334	116,057	7.7
Total	740,630	966,614	1,260,137	1,347,852	1,326,903	1,501,788	1,499,717	100.0

Source: Statistics Canada, Culture, Tourism and the Centre for Education Statistics Division.

TABLE 4

Canada's Imports of Selected Cultural Goods, \$'000

	1991	1992	1993	1994	1995	1996	1997	
							value	per cent
Print and Music	2,333,609	2,624,408	3,022,746	3,542,008	3,759,064	3,572,586	4,008,138	84.4
% of total	83.4	84.8	86.3	86.5	84.8	84.7	84.4	
Books & printing services	914,019	1,027,475	1,116,196	1,212,427	1,276,946	1,226,654	1,377,068	29.0
Newspapers, periodicals	651,544	683,222	732,486	839,312	876,582	879,681	946,429	19.9
Other written material	19,015	19,284	25,642	61,881	98,649	93,272	81,553	1.7
Music, video, software & other recordings	740,600	884,316	1,135,562	1,414,734	1,493,079	1,360,212	1,588,331	33.4
Printed music	8431	10111	12860	13654	13808	12767	14757	
Other Selected Cultural Goods	465,985	469,447	479,202	554,411	676,123	643,414	740,417	15.6
% of total	16.6%	15.2%	13.7%	13.5	15.2	15.3	15.6	
Visual art	67,881	72,558	68,544	64,402	70,403	69,919	90,945	1.9
Architectural plans	5,348	4,482	5,332	4,782	5,130	4,099	3,035	0.1
Design-related goods	83,692	85,551	90,119	101,583	188,096	203,749	247,691	6.2
Advertising material	124,316	157,693	169,568	171,062	189,759	176,399	197,083	4.2
Photographs & mass-produced art	184,748	149,163	145,639	212,582	222,735	189,248	201,663	4.2
Total	2,799,594	3,093,855	3,501,948	4,096,419	4,435,187	4,216,000	4,748,555	100.0

Source: Statistics Canada, Culture, Tourism and the Centre for Education Statistics Division.

Appendix 3

Ownership of rights in photographs

Most photographers are independents. A significant minority are employees. The major users of photographs are newspapers and magazines, advertising agencies, commercial and industrial enterprises. Wedding photography and portraits are important segments of the market.

Industry members stress that the current law creates uncertainty about ownership of rights that inhibits the participation of Canadian photographers in the stock photography market.⁷⁷ They also claim that potential clients favor foreign works because of a lack of assurance that Canadians offering material for on-line display are the actual right holders. Industry members also contend that they cannot offer as much material as foreign photographers for secondary use because they do not hold the rights to a very substantial portion of their work.⁷⁸

Photographers and users of photographs recognize the advantage of allowing rights in commissioned photographs to be assigned to other parties. They note, however, that until recently, reassignments were intermittent. Although users and producers agree that reassignments are more common today, they do not regard the practice as widespread. The press in particular appears more averse to have rights in commissioned pictures rest with photographers.⁷⁹

Museums and archives claim that finding right holders in photographs is more difficult than for other works.⁸⁰ It is an obstacle that affects their decision whether to accept collections of works by Canadian photographers. There is at least one reported instance of a museum refusing a donation of a collection of pictures unless the donor accepted to provide evidence of ownership of each and every picture. Ambiguity about the identity of right holders also inhibits the use of photographs by libraries and their insertion in material posted on line.

⁷⁷ This is a market where users choose from large banks of pictures compiled by private firms and made available for viewing on line. Users who find pictures that suit their needs can acquire licenses on-line. One major firm that is active in this market is CORBIS. Home page <http://www.corbis.com/>

⁷⁸ Those who commissioned the works are not interested in exploiting them for purposes other than those for which they have been made. If photographers held the rights, the works would more likely be exploited subsequent to their first use. It should be noted that photographers who own the copyrights to a photograph of a person might still be prevented from disseminating it in public without the consent of the person shown on the photograph. The reason is that dissemination of the image could constitute a violation of privacy and of the right to one's image. Court of Appeal for Quebec, S.C.R. Aubry v. Éditions Vice-Versa Inc. 591 at http://www.lexum.umontreal.ca/csc-scc/en/pub/1998/vol1/html/1998scr1_0591.html.

⁷⁹ Such refusal is not universal. Some media organizations offer standard contracts under which ownership of photographs rests with photographers. Under these contracts, the party commissioning a photograph is entitled to a first publication right and possibly another use in a very specific context. The photographer obtains all other rights.

⁸⁰ One archivist points out that among the 40,000 photographs in her archive, the name of the author is unknown in more than 95% of the cases.

Appendix 4

RMI: The position of libraries, archives and educational institutions

The librarians, archivists and educational institutions (LAMs) we have interviewed share the view that all types of RMI do not deserve equal protection. They consider that the strongest protection should be given to information that identifies the work and the right holders. They claim that if tracking information is to enjoy any protection, it should be protected less than other types of information. They insist that particular attention should be given to the protection of privacy. The majority opinion is that protection granted to information about conditions of use should be less than information that identifies the work and the right holders.

Even so, LAMs are uneasy about differences in the treatment of various information types. They doubt whether in the absence of a clear delineation between codes that serve different purposes, it is possible to separate information types in a practical way. They also point out that it may not be possible to manipulate one type of information while leaving other types undisturbed. As well, they are concerned about the implications of blurring between measures that protect content and measures that identify content. Furthermore, they point to the difficulties likely to appear when RMI is manipulated – deliberately or accidentally- while engaging in a legal act of circumvention.

Some users emphasize that it is important that the law emphasize that the mere existence of legal measures against tampering does imply a presumption that the RMI is accurate, relevant or, applicable in Canada.

A belief shared among libraries and archives is that erroneous information is more likely when it deals with conditions of use. This is why some are opposed to giving any legal protection given to such RMI. However, they also recognize that excluding such information from the ambit of legal protection may violate Canada's treaty obligations. For that reason they advocate an approach under which exceptions to legal protection are granted under a public interest clause. They argue that the specific situations where tampering is in the public interest should be spelled out in regulations, not in the law. They hold the view that this approach would make it possible to bypass the difficulty of distinguishing between types of information in the law. They believe that this has the advantage of providing to anti-tampering rules the flexibility required to respond to technological change.

LAMs also take the view that measures against circumvention and tampering should distinguish between actions undertaken for business purposes and acts that do not have a commercial objective. They plead for a linkage between the severity of the remedies adopted in instances of tampering and the severity of the damages the have resulted from that tampering. They are ambivalent, however, about the remedies that should be applied in cases of *potential* economic damage.

Some LAMs are disturbed by the fact that the WIPO treaties do not distinguish between RMI embedded by right holders and RMI attached by other parties. They claim that organizations such as collecting societies sometimes embed RMI that interferes with the management of collections. They also argue that libraries should have the right to remove information attached by other libraries or similar institutions. They recommend that only the RMI embedded by owners of rights and clearly identified as such, should benefit from legal protection.⁸¹

Libraries often engage in negotiations with right holders to broaden the scope of authorized uses permitted by standard licensing agreements. In order to obtain authorizations for extra uses they may negotiate directly with right holders, with their representatives, or seek permissions via provincial institutions such as the Advance Media Acquisition Centre in British Columbia. Such negotiations may deal with the public performance of a video prohibited under the standard license or with the right to make copies from a master. Libraries want the renegotiated terms to be embedded in a form that is visible to those who make use of the material.⁸² They are concerned that the legal provisions against tampering may obstruct attempts to modify the terms of use as initially embedded by right owners or their agents.

Libraries and archives recognize that they are not always equipped to remove RMI, change it or, add information. This is true in particular when RMI is protected by technical means. Libraries are worried about the legal consequences of contracting such operations to specialized firms.

A concern shared among all respondents is that the widespread use of anti-circumvention means and/or RMI will deny them access to works in situations where they benefit from a fair dealing provision. Some respondents insist that regardless of the scope of the exceptions to provisions against circumvention of technical means, the law should not impose penalties on persons who remove RMI while engaging in a legitimate act of circumvention and who, having gained access to the content, reinstate the RMI or make a reasonable attempt to do so.

In regard to fair dealing, one archivist points out that it is impossible to ignore the fact that in order to determine whether some material deserves to be archived it is necessary to look it. If access is protected by technical means, archivists may not know whether the material is sufficiently important to be part of the archive.

⁸¹ One librarian is concerned by the fact that the treaties refer not only to RMI embedded in a work, but also to information that is somehow attached, appended or appearing in connection with the use of a work. He wonders to what extent protection of RMI would extend to hyperlinks.

⁸² In the physical world, agents of right holders often undertake repackaging that reveal the revised licensing conditions to users. There is some concern that this will not happen in the digital work.

