

THE VALUE OF MUSIC TO COMMERCIAL RADIO STATIONS¹

by

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ABSTRACT

Our objective in this paper is to develop a methodology to infer from the behaviour and choices of broadcasters the “competitive” value they attach to the use of music, more precisely sound recordings, and to derive from such an inferred value the proper “competitive” copyright payments to be made to authors, composers, performers, and makers of sound recordings. We illustrate the methodology by applying it to Canadian data. The background is provided by the statement of case and supporting proof presented in the 2004 proceedings before the Copyright Board of Canada on the commercial radio tariff. The results call for a significant increase in copyright payments by the commercial radio industry: the proper competitive copyright payments should be three times what the industry currently pays.

PRELIMINARY COMMENTS WELCOME

¹ This paper makes use of the report “The Value of Performers’ Performances and Sound Recordings to Commercial Radio Stations” (revised May 19, 2004) by Paul Audley, Marcel Boyer and Stephen Stohn, prepared for the Neighbouring Rights Collective of Canada (NRCC) for use in the Collective’s 2004 proceeding before the Copyright Board of Canada on the proposed NRCC Tariff 1A, to be applied to commercial radio.

Society for Economic Research on Copyright Issues (SERCI)
Berlin, July 12-13, 2007

1. INTRODUCTION

The purpose of this paper is to establish what would constitute equitable remuneration to owners of copyrights for the use of musical works by commercial radio stations.²

In 1997 the Canadian *Copyright Act* was amended with respect to both performers' rights and the rights of makers of sound recordings.³ Sections 15 and 19 of the *Act* conferred specific rights on performers that they had not enjoyed in the past. Among the rights granted to performers was the right to receive equitable remuneration for the performance in public or the communication to the public of the performer's performance embodied in a published sound recording. Under this provision, broadcasters who communicate to the public performers' performances embodied in a sound recording must pay equitable remuneration to the relevant collective society, subject to a provision that limits the right to such remuneration to Canadian performers and to performers who are nationals of countries that have ratified the Rome Convention. The revisions made to the *Copyright Act* in 1997 also extend the rights described in Section 18 of the *Act* with respect to sound recordings.⁴ For the purposes of this paper the relevant revision of the *Act* extended to the makers of sound recordings the right to equitable remuneration for the performance in public or the communication to the public by telecommunication of published sound recordings. This right of remuneration was limited to Canadian makers of sound recordings and to makers that are nationals of Rome Convention countries, or to sound recordings for which the fixations occurred in Canada or a Rome

² For the sharing of copyright payments between the three groups of rights holders who qualify for payment under the provisions of the Canadian *Copyright Act*, namely authors and composers for the use of their works, performers for the use of their performances, and makers of sound recordings for the use of sound recordings, see Marcel Boyer, "The cooperative game foundations of efficient sharing of copyright payments between authors-composers, performers, and makers" (in preparation).

³ Through this paper references to "sound recordings" should be interpreted as referring to sound recordings that embody musical works and performers' performances.

⁴ It may be useful or interesting to note that American radio stations are not required to pay any amount for such rights recognized since 1997 under Canadian law as performers' and makers' rights to equitable remuneration for the communication to the public by telecommunication of a published sound recording.

Convention country. As in the case of the performers' rights, the requirement to pay equitable remuneration provides that such payment should be made to a collective society.⁵

The premise of the analysis presented in this paper is that the appropriate copyright tariff to be paid by commercial radio stations for their use of copyrighted musical works should be based on the amount that those stations would willingly pay if they were confronted with a well-functioning market for the rights to use the sound recordings in question.

Equitable remuneration corresponds to that level of compensation that would emerge in a competitive market where willing buyers and willing sellers, each and every one of them being "price-takers", would freely agree on transactions. Such an approach meets the requirement that the level of remuneration established should be equitable for both the sellers and the buyers. In a market situation where both sellers and buyers are participating voluntarily, the seller is receiving a price the buyer has agreed to and the buyer is paying a price the seller has agreed to. They will likely transact up to the point where the marginal value of an additional transaction for the buyers (demand) is just equal to the marginal cost of that additional transaction for the seller (supply), where marginal cost may be interpreted either as a short-run marginal cost or as an all-inclusive long-run one.⁶

On the demand side, the buyer (in this case a commercial music format radio station) will want to buy a quantity of input (in this case, sound recordings) such that the value of the marginal product of this input is equal to its price. The value of the marginal product of sound recordings for commercial radio corresponds to the additional advertising revenue an operator of a music station can obtain from using one more unit of sound recordings. This additional revenue is given by the "selling price" or advertising rates of the buyer's product (its audience

⁵ The Canadian *Copyright Act* and the Copyright Board practice clearly foster and the *Act* itself sometimes imposes collective administration. Moreover, the maker of a sound recording and the performer whose performance is embedded in that recording are entitled to an equal share of the remuneration. In the United States, collectives are generally perceived as organizations to be scrutinized for anticompetitive behaviour.

⁶ There is a general agreement between collective societies, broadcasters and the Board that equitable remuneration should be equitable to rights owners and users and should reflect the value the rights holders contribute to and the benefits the users derive from recorded music as programming content.

characteristics) times the marginal efficiency or productivity of sound recordings (music format) in attracting listeners. A similar process applies to the purchase of other inputs.

On the supply side, the all inclusive long-run marginal cost should represent the payment for the marginal or additional unit of sound recordings produced which would justify its production by the seller. In the present case, the seller is the music industry comprising authors, performers and makers of sound recordings. This payment must cover the direct material cost, the opportunity value of time spent or invested, the opportunity value of the creation/innovation effort, etc.

It is not an easy matter to identify such a price given the very particular characteristics of the commercial radio industry, the basis on which that industry has access to sound recording content, and the resulting absence of a market process for determining the price. However, the objective must be to find a price that would ensure that operators of music radio stations are properly and equitably compensated, that is, a price that would ensure that the risk-adjusted rate of return on capital (RAROC) is competitive and that at the same time the authors, performers and makers are properly and equitably compensated. In a sense, the market equilibrium between willing buyers and willing sellers in the specific market considered here, namely the copyrights in musical works, performances and sound recordings embodied in sound recordings, may involve adjustments in related markets for other inputs used in the commercial radio industry, such as capital, labour, and materials.

All inputs or factors of production used in generating (advertising) revenues in the commercial radio industry should be properly compensated at their respective competitive equilibrium levels. If one input, such as sound recordings, were priced below or above, *mutatis mutandis*, its competitive equilibrium level, then other inputs, such as direct labour and/or capital, could benefit from partially capturing the sound recordings' contribution to the value of the commercial radio operators and industry, thereby generating a socially costly misallocation of resources.

Since the price for the right to use sound recordings cannot be established on a market basis, the role of the (Canadian) Copyright Board is to be a surrogate for such a competitive market, determining, based on the best evidence it can find, what the competitive price would be if such a market existed and operated efficiently. In so doing, there is a need to examine all information and any relevant proxies or indicators of what such a price would and should be. Such information may be of different types and come in different forms: information on the commercial radio industry; information on the behaviour of the operators of commercial radio stations that broadcast in a music format; the prices of substitute products or services and also hypothetical, simulated competitive processes.

The profit/value maximizing radio station operator will use sound recordings and any other program content in such proportions that their marginal contribution to profitability and value is the same: the last minute or half-hour of recorded music and the last minute or half-hour of any other program content must generate the same net profit (marginal revenue or value minus marginal cost or price). Otherwise, profitability and value would not be maximized and the operator would reduce one and increase the other. If we were to observe that X% of “real” or “advertising-adjusted” program content on a typical day is sound recordings, it would indicate and reveal the marginal value of sound recordings. If the operator rationally aims to maximize the profitability or value of his or her station and chooses accordingly a precise level of program sharing, X% for sound recordings and (1-X)% for other program content, then the marginal benefit of the last minute of music broadcasted is literally equal to the marginal benefit of the last minute of any other program content, in particular talk content broadcasted.

Our objective in this paper is to develop a methodology to justify on theoretical grounds such an approach to the value of sound recordings for commercial radio stations and to illustrate, from Canadian data, a way to compute empirically such value, hence determine the payments to be made by commercial radio stations to music copyright owners.

2. THE MODEL

In the absence of a well functioning market, the Copyright Board must determine the value that recorded music represents for commercial radio (CR) operators, and translate this value into a price or payment to authors, performers and makers for their rights in recorded music.

Economic analysis provides a critical perspective on how to determine the appropriate price of recorded music because it establishes the link between the relative use of inputs in the production of broadcast radio (recorded music and talk), and the relative value of those inputs. In the absence of a “market” for recorded music in broadcast radio, the price of recorded music is unknown. However, the relative broadcasting time devoted to music and talk is known, and this relative use of the inputs can be used to directly infer the relative value of recorded music to radio broadcasting.

Alternatively stated, while the price of recorded music is not known in the absence of a market, the relative use of recorded music and talk is known and easily measured. Economic analysis provides the missing direct link between the measurable relative use of recorded music and talk in commercial radio broadcasting, and the *implicit* price of recorded music, that is, the price of recorded music implied by the relative use of recorded music and talk.

To demonstrate this link between the relative use of recorded music and talk, consider a simple model with the following simplifying assumptions that are made to facilitate the narrative, but are not essential to the key result: CR operators seek to achieve a competitive expected risk adjusted return on capital RAROC representing the best alternative use of their invested capital. In so doing, they will spend on different program content different amounts that, given all their other operating expenses and all their revenues from advertising and other sources, which clearly will depend on many factors, including the amounts spent on different program contents, leave them with such an expected RAROC.

For simplification, assume that all revenues come from advertising and that there are only two types of program content, namely “music” and “talk”. Let us assume also that the typical

relevant part of the day lasts, for example, 3 hours and that the allocation of air time between the different program contents in a given part of the day is done on the basis of N-minute increments (N would typically be 1, 10, 15, and 30). Assume for simplification that the smallest time increment is 1 minute.

We will assume that the additional (or marginal) costs to commercial radio operators of a one-minute increment in music content and of a one-minute increment in talk content are both equal to 0 since the payment for copyrights on recorded music is typically set as a *fixed percentage* of revenues and the payment for talk content is typically set on a contract basis.

The total number of minutes of program content in a given part of the day is total broadcast time minus all other items such as station promotion, station identification, advertising, etc. We will assume, to simplify the analysis, that 100 minutes are available for program content in a three hour period. The goal of a CR broadcaster is to find the proportion of the 100 minutes to be devoted to music and talk in order to yield the highest profit. CR broadcasters will alter the relative allocation of time between music and talk if it is profitable to do so. For example, a broadcaster will devote one additional minute to music, and consequently one less minute to talk, if the additional advertising revenue associated with the additional music programming offsets any loss of advertising revenue due to the reduction in talk content time. In responding to the market forces created in the advertising market, broadcasters will settle on a particular allocation of time between music and talk such that there is no opportunity to increase revenues by reallocating minutes between music and talk.

This result can be compared to that achieved if the market for recorded music was competitive. In a competitive market, the CR broadcaster would face prices for recorded music content and talk content it buys that are determined by market forces. Advertising rates for airtime would also be determined by market forces. To maximize the profit or value of the firm, the broadcaster would allocate the available time between music and talk so that the last minute of each type of content generates the same net advertising revenue. That is, the additional profit (additional advertising revenue less the additional cost) would be identical for the last minute of music and the last minute of talk time allocated by the broadcaster. If the

CR broadcaster could increase profitability by increasing the amount of time devoted to music relative to talk, it would do so. Consequently, the relative amount of time devoted to music and the relative amount of time devoted to talk must be such that their marginal contributions to profits are exactly equal.

In the absence of a market for recorded music, the closest surrogate to the implicit per minute price or value of music content and talk content is the additional contribution of each to advertising revenues. Given our simplifying assumption that the additional cost of a minute of music and a minute of talk are equal to 0, the additional per minute contribution of each to advertising revenues must be equal. The tariff rate that approximates the implicit competitive market price for music must therefore be such that the payments for the different program contents, music and talk, are *proportional* to their respective numbers of minutes of programming.

Note that the total contributions to advertising revenues of each type of content (as distinct from the contribution made by the last minute of each type of content) would be larger than the additional contributions of the last minute programmed of each type of content. The difference would serve to cover other expenses as well as the cost of capital or the return on the capital invested (the RAROC).

Therefore, if the CR operator considers or chooses an (M, T) allocation of air time between recorded music and talk, it must be because that is the allocation which maximizes the profits or value of the station. This is illustrated on Figure 1 where, in any 100 minute time length of program content, the value of the marginal product of music content in generating advertising revenues is decreasing in the level of music content measured in minutes from left to right, and the value of the marginal product of talk content in generating advertising revenues is also decreasing in the level of talk content measured in minutes from right to left. The profit or value maximizing time allocation is reached at the intersecting point between the $vpm(M)$ and the $vpm(T)$ curves, where $vpm(M) = vpm(T)$ and $M + T = 100$.

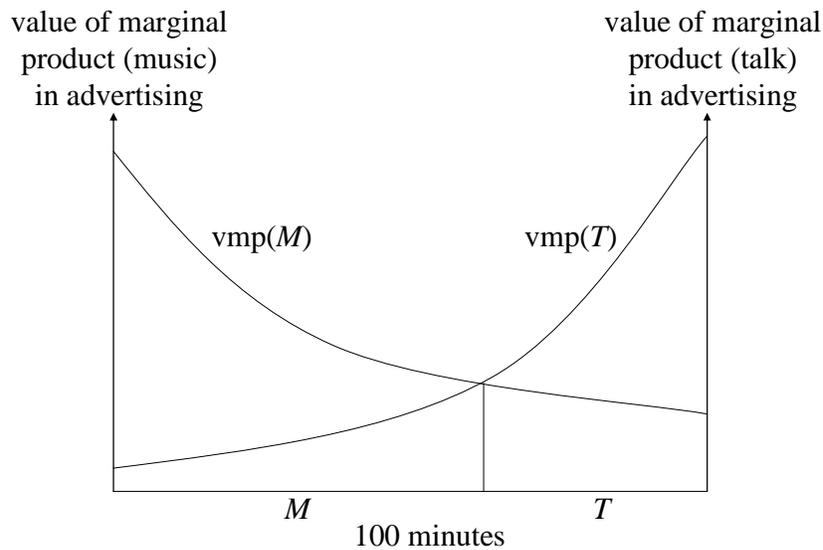


Figure 1

At the intersection point, the value of marginal product of both music and talk is the same and it reveals an implicit “competitive price” for the marginal one-minute length of music content or talk content: if the CR operator were facing a competitive price of v per minute of music content input, he would use music content up to the point where $vpm(M) = v$; similarly, if he were facing a competitive price of v per minute of talk content input, he would use talk content up to the point where $vpm(T) = v$. In that sense, the intersecting point $vpm(M) = vpm(T)$ reveals an implicit competitive price of $vpm(M) = vpm(T) = v$. If that is so, the implicit “competitive payments” to those inputs would be $v \cdot M$ and $v \cdot T$, corresponding to the payments that would be willingly made in such a competitive market by the CR operator to the providers of music and talk contents. In other words, if the market price of each minute of music content is v , the CR operator would buy and broadcast M minutes of music content; similarly, if the market price of each minute of talk content is v , the CR operator would buy and broadcast T minutes of talk content. Hence, total payments would be proportional to the (M, T) allocation: M % of the total for recorded music and T % of the total for talk content as illustrated on Figure 2.

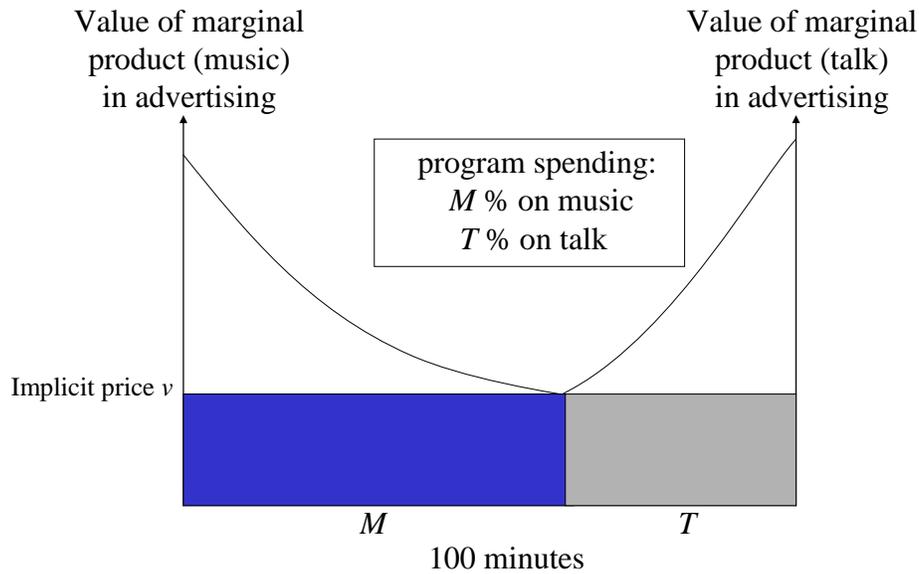


Figure 2

Some remarks should be made regarding the above conclusion. First, it is possible that talk hosts have idiosyncratic characteristics that make them, more precisely each one of them, capable of exerting some market power, thereby catching a higher proportion of advertising revenues than their implicit “competitive” value given by the value of marginal product (talk) in advertising, the implicit price v times the number of minutes of air time T . If that is so, the proportion of talk content cost in total programme spending could be somewhat larger than T % but the additional payment would come from difference between the total value of talk content, measured by the area under the $vpm(T)$ curve up to the intersection point, and would not change the intersection point itself, that is, the (M, T) time sharing illustrated in Figures 1 and 2.

Second, the above analysis does not mean that the pricing of recorded music should be done on a per minute basis. In fact, there are good reasons why the payments to copyright holders should be made as a fixed value or a percentage of revenues with an effective marginal price equal to 0. The main reason is that the short run marginal social cost of playing additional minutes of recorded music is indeed 0 since recorded music is an information good in the economic sense. But the *implicit* competitive price revealed by the observed behaviour and decisions of CR operators remains nevertheless positive at v .

3. EMPIRICAL IMPLEMENTATION

The empirical implementation of the above analysis requires the observation of the time allocation between music content and talk content as chosen by CR operators. Tables 1 and 2 below provide such data for Canadian radio stations.⁷ As Table 1 indicates, over the total broadcast day, 76.1% of all airtime devoted to programme content is sound recordings. Sound recordings also account for a very substantial majority of the program content hours during every part of the day. Even during the 6:00 a.m. to 9:00 a.m. period, the period when sound recording use is lowest, just under two thirds (63.5%) of the content is sound recordings. The percentages vary through the remainder of the day from a low of 70.5% of program time during the noon to 1:00 p.m. period to a high of 83.5% during the 3:00 p.m. to 4:00 p.m. period.

In this respect, if we look at the broadcast day from 6:00 a.m. to midnight, excluding commercial content only, the Erin Research study found that 73.7% of this portion of total airtime within the schedule was accounted for by recorded music (Table 2 below.) If neither commercials nor station IDs and promotion are excluded then a proportion of 67.3% of all broadcast hours over the same period is accounted for by sound recordings used as feature program content.

⁷ Table 1 and 2 are taken from the report *The Use of Music on Commercial Radio Stations: Part I, Sound Recordings as Feature Content on Music Stations* prepared for NRCC by Erin Research (Tables 3 and 5). The study was based on a randomly drawn sample of commercial radio stations, which were members of the Canadian Association of Broadcasters (CAB) and broadcasting in 2003-2004 in a music format. Because the sample was drawn at random it is logical and reasonable to assume it is not skewed toward either overstating or understating the presence of sound recording content on commercial stations.

TABLE 1

Breakdown of Program Content: Sample Stations, 2003-2004
 (% of broadcast hours devoted to program content – by day part and all day)

Day Part	Program Type	Program Content Breakdown
6:00 a.m.-9:00 a.m.	Sound recordings	63.5%
	Other programming	36.5%
9:00 a.m.-3:00 p.m.	Sound recordings	77.8%
	Other programming	22.2%
Noon - 1:00 p.m.	Sound recordings	70.5%
	Other programming	29.5%
3:00 p.m. - 4:00 p.m.	Sound recordings	83.5%
	Other programming	16.6%
4:00 p.m. - 6:00 p.m.	Sound recordings	77.7%
	Other programming	22.3%
6:00 p.m. - 7:00 p.m.	Sound recordings	76.6%
	Other programming	23.4%
7:00 p.m. - Midnight	Sound recordings	79.2%
	Other programming	20.8%
All Day	Sound recordings	76.1%
	Other programming	23.9%

TABLE 2
Percentage Breakdown of Broadcast Hours
Including and Excluding Commercials
6:00 a.m. – Midnight, 2003-2004

Type of Broadcast	% of Broadcast Hours Excluding Commercials	% of All Broadcast Hours Including Commercials
Sound recordings	73.7	67.3
Newscasts	5.9	5.4
Other programming	17.3	15.8
Station IDs/Promos	3.1	2.8
Commercials	-	8.7
Total	100.0	100.0

The advertising and media consulting firm NextMedia⁸ analyzed the way commercial radio stations and their program content are marketed to listeners and to advertisers. The conclusions the NextMedia study reached included the following: music format radio stations depend primarily on music to attract both listeners and advertising revenue; radio stations target consumers and advertisers with station formats that are largely determined by the mix and type of music a particular radio station plays; advertisers buy spots on radio stations that reach their desired audience demographically and psychographically and radio stations attract these audiences primarily by the music they play, and to a lesser degree by the information, personalities and promotions that are packaged around the music; advertisers seek environments that enhance their brands and the music a station plays, along with the music and artist-related sales opportunities available to advertisers, allow for dynamic brand association; less talk, more music is being used by stations across the country as an important selling point to attract and retain listeners.

To better quantify the role recorded music plays in helping commercial radio stations attract listeners and, as a result, advertising revenue, it is necessary to look at the size of the audience during the various parts of the day. To the extent that audiences are, for example, listening to a greater degree during periods of the day when sound recording use is lower and listening less to periods of the day when sound recording use is higher, such differences should be taken into account in establishing appropriate copyright tariff rates for the use of sound recordings. Statistical data concerning the size of the audience to commercial radio stations by day part can be obtained from Statistics Canada. The resulting data, based on the BBM⁹ survey as analyzed by Statistics Canada, are shown in Table 3 below.

⁸ Nancy Smith (2002), *The Importance of Music in Marketing Commercial Radio to Listeners and to Advertisers*, Nextmedia, Exhibit NRCC-8, Commercial Radio Stations SOCAN and NRCC Tariffs 1.A (2003-2007) Copyright Board of Canada, 2004.

⁹ The Bureau of Broadcast Measurement (now BBM Canada) is a not-for-profit cooperative of broadcasters and advertisers, whose mandate is to provide high-quality, impartial measurement of radio audiences in Canada.

TABLE 3
Aggregate Hours per Week of Listening to Commercial Radio Stations

Day Part	Hours of Listening (000s)				% of Listening hours				4-year average
	1990	1995	2000	2002	1990	1995	2000	2002	
6 a.m. - 9 a.m.	87,626	92,828	92,083	90,710	22.22%	21.13%	21.55%	20.97%	21.47%
9 a.m. - 3 p.m.	167,086	192,352	185,619	189,495	42.37%	43.78%	43.45%	43.82%	43.36%
3 p.m. - 7 p.m.	87,133	99,026	99,267	101,504	22.10%	22.54%	23.24%	23.47%	22.84%
7 p.m. - midnight	52,477	55,146	50,256	50,764	13.31%	12.55%	11.76%	11.74%	12.34%
TOTAL	394,322	439,352	427,225	432,472	100.0%	100.0%	100.0%	100.0%	100.0%

Using the four year average breakdown of listener hours by day part, and consolidating the Erin Research study's findings into the same four time periods, the percentage of content consisting of recorded music can be compared to the share of listening hours. If we attach to each day part a weight equivalent to the share of listening it accounts for, the percentage of program listening accounted for by sound recordings can be estimated (Table 4). During the period from 6:00 a.m. to midnight, 75.1% of the program content heard by listeners to music stations is sound recordings.

TABLE 4
Estimate of Share of Listening to Program Content on Music Stations Accounted for by Sound Recordings

Day Part	% of Listener Hours	Sound Recordings as % of Program Content	Weighted Share of Program Listening
6:00 a.m. – 9:00 a.m.	21.47	63.5	13.6
9:00 a.m. – 3:00 p.m.	43.36	77.8	33.7
3:00 p.m. – 7:00 p.m.	22.84	78.8	18.0
7:00 p.m. – Midnight	12.34	79.2	9.8
Total 6:00 a.m. - Midnight	100.0	76.1	75.1

To examine more closely the relationship between content consisting of recorded performances of music and the ability to earn advertising revenues, the distribution of commercial content throughout the broadcast day should also be examined. Table 5 below provides that comparison, examining whether, and to what degree, commercial content may

be more focused in one day part than another. This information, based on the Erin Research study, provides assistance in judging whether it is reasonable to assume that, since sound recordings account for an estimated 75.1% of listening hours during the day, they can also be assumed to be delivering 75.1% of the advertising revenue.

On average, 11 hours of commercials were carried on each station during the sample week. This represented 8.7% of the total broadcast hours (126 hours). Within each day part the percentage of broadcast time accounted for by commercials varied. From 6:00 a.m. to 9:00 a.m., 11.5% of the content broadcast was commercials, compared to a low of 6.4% between 7:00 p.m. and midnight. The corresponding figures for the 9:00 a.m. to 3:00 p.m. and 3:00 p.m. to 7:00 p.m. day parts differed very little – 9.1%, compared to 9.0%.

Because the number of broadcast hours within each day part varies, it is also significant to look at the overall percentage of commercials broadcast within each day part. For example, 22.0% of all commercials broadcast during the day were aired between 6:00 a.m. to 9:00 a.m., with the remaining 78.0% broadcast during the remainder of the day.

TABLE 5
Distribution of Commercials Compared to Distribution of Listening Hours by Day Part

Day Part	Hours of Commercial Broadcast Time/week	Commercials as % of Broadcast time During Day Part	% of All Commercial Time/Week	% of Total Listening Hours/Week During Day Part
6:00 a.m. – 9:00 a.m.	2.42	11.5%	22.0%	21.47%
9:00 a.m. – 3:00 p.m.	3.84	9.1%	34.9%	43.36%
3:00 p.m. – 7:00 p.m.	2.52	9.0%	22.9%	22.84%
7:00 p.m. – Midnight	2.22	6.4%	20.2%	12.34%
TOTAL	11.00	8.7%	100.00	100.00%

This ratio obviously differs little from the percentages of listening hours accounted for by the 6:00 a.m. to 9:00 a.m. time period (21.47% of listening hours) and the 78.54% of listening hours accounted for by the remainder of the broadcast day. Nevertheless, this does not mean that only 22% of the commercial revenue earned by music stations is accounted for by the

6:00 a.m. to 9:00 a.m. time period. The 22% figure does not take into account the fact that advertisers pay more for commercials run during parts of the day when audiences are larger. If we adjust the percentages of commercial time by day part to reflect the average differences in the 30-second commercial rate, a rough estimate of the commercial revenue generated by each day part can be calculated (Table 6).

TABLE 6
Estimate of Percentage of Commercial Revenue Generated by Each Day Part

Day Part	% of Commercial Time in Each Day Part	Average Commercial Rate for Day Part (Based on Index of 1.00 for 6-9 am)	Adjusted Weight by Day Part to Reflect Commercial Rates	Estimated Contribution of Each Day Part to Commercial Revenue
6:00 a.m. – 9:00 a.m.	22.0	1.00	22.0	25.9%
9:00 a.m. – 3:00 p.m.	34.9	.86	30.0	35.4%
3:00 p.m. – 7:00 p.m.	22.9	.86	19.7	23.2%
7:00 p.m. – Midnight	20.2	.65	13.1	15.4%
Total 6:00 a.m. –Midnight	100.0%		84.8	100.0%

In assessing the value sound recordings contribute to commercial radio stations measured in terms of the contribution they make to a station’s ability to attract advertising revenue, relatively greater weight should be attributed to day parts that deliver advertising revenues disproportionate to their share of listening hours. Table 7 makes the necessary adjustments to reflect the estimated contribution of each day part to generating the commercial revenues of the station.

It appears therefore that, although the 6:00 a.m. to 9:00 a.m. period accounts for an average of 21.47% of listening hours with sound recording program content at 63.5%, its contribution to the advertising revenues of music stations is higher at 25.9%. For the remaining part of the day accounting for 78.53% of listening hours and 74.1% of advertising revenues, sound recordings account for 78.6% of program content. The conclusion to which this evidence leads is that recorded performances of music deliver substantially greater value to commercial

radio stations than the remainder of the program content they broadcast – which includes news, weather, sports, traffic and the comments of on-air hosts.¹⁰

TABLE 7
Sound Recording Program Content by Day Part
Compared to Contribution of Day Part to Commercial Revenue

Day Part	% of Sound Recording Program Content	Estimated Contribution of Day Part to Commercial Revenue
6:00 a.m. – 9:00 a.m.	63.5%	25.9%
9:00 a.m. – 3:00 p.m.	77.8%	35.4%
3:00 p.m. – 7:00 p.m.	78.8%	23.2%
7:00 p.m. – Midnight	79.2%	15.4%
TOTAL	76.1%	100.0%

Source: Tables 4 and 6 above.

A further question may be raised in relation to the value commercial music stations derive from sound recordings as an input to their program content. That question is whether the program hosts who provide most of the non-news portion of the spoken word program content act as a drawing card for the station that makes them proportionately more important than the percentage of the program content they account for.

If we look first at a breakdown of program content that separates newscasts from both recorded music and other program content (Table 8), the contribution of on-air hosts would be included in the 11.1 minutes of “other programming” broadcast every hour during the 6:00 a.m. to 9:00 a.m. period. In contrast, even during this period, 32.8 minutes of every hour involves the playing of sound recordings. Similarly, throughout the 9:00 a.m. to midnight period the contribution of on-air hosts would account for less than 9.1 minutes of every hour, compared to 41.9 minutes of music.

¹⁰ There are significant limitations to the information on which these estimates are based as only 13 of the 30 stations surveyed provided clear 30-second commercial rates by day part. For all stations, and for larger station in particular, the rate structure is often more complex, making it difficult to determine without further information the typical level of advertising rates in each day part. Further, for all stations there is likely to be a significant measure of rate negotiation that may result in the rates actually charged differing from those in the rate card (although this negotiation of rates presumably affects the rates for all day parts).

TABLE 8
Breakdown of Content of an Average Hour of Broadcast Time
During the 6:00 a.m. to 9:00 a.m. Period and From 9:00 a.m. to Midnight

	6:00 a.m. to 9:00 a.m.	9:00 a.m. to Midnight
Sound Recordings	32.8 minutes	41.9 minutes
Newscasts	7.8 minutes	2.3 minutes
Other Programming	11.1 minutes	9.1 minutes
Station Ids/ Promos	1.4 minutes	1.8 minutes
Commercials	6.9 minutes	4.9 minutes
Total	60.0 minutes	60.0 minutes

What seems certain is that, even if the program hosts add value to commercial stations that may be disproportionate to their contribution to the spoken word content, the on-air talent is certainly less important than the sound recording content in attracting listeners to a particular station and in retaining audiences. This is evident in the finding of a Circum Network study,¹¹ which indicates that if the music on their favourite station were to change to a different format 83% of listeners would switch to a station that offered the kind of music they preferred. Indeed, it appears, from that report, that CR stations choose their music format as a best response to competitors' choices as in most cities in Canada, listeners who like a particular genre of music have in fact only one station available that offers that music to them. For example, of 23 licensed stations in Toronto, the only music format offered by more than one station in 2002 was Adult Contemporary (AC), with two competing stations. The same is true of stations in the Ottawa-Gatineau region. Halifax had two stations broadcasting in the "Oldies" format and Montreal had two French-language stations broadcasting in the "Contemporary Hit Radio" (CHR) format. In Vancouver, Kelowna, Calgary, Regina, Sudbury, London, Montreal (English stations), Quebec City, Saguenay, and St. John's, the pattern is one station per music format.

This pattern suggests that in seeking to effectively attract listeners and advertising revenue station owners focus primarily on choosing a music format not available in the market that is

¹¹ Benoît Gauthier (2002), *Importance de la musique à la radio en 2001: un sondage auprès des Canadiens*, Réseau Circum inc., Exhibit NRCC-9, Commercial Radio Stations SOCAN and NRCC Tariffs 1.A (2003-2007) Copyright Board of Canada, 2004.

likely to attract a substantial core of listeners, rather than relying primarily upon on-air talent as the basis for establishing a competitive position in the market.

While the inescapable conclusion appears to be that the sound recordings broadcast provide a greater benefit to music stations than the other programming content offered, a very conservative estimate of the relative importance of sound recordings as an input to program content during the 6:00 a.m. to 9:00 a.m. period would attribute 50% of the value to sound recording content and 50% to the other elements of program content, including the morning show hosts. This attribution of value assumes that the 18.9 minutes of news and other program content (Table 8) broadcast between 6:00 a.m. and 9:00 a.m. delivers as great a benefit in attracting audiences and advertisers as the 32.8 minutes of sound recording content. Similarly, a very conservative estimate of the importance of sound recordings during the remainder of the day would attribute two-thirds of the value of the program content to sound recordings. This attribution assumes that, although news and other program content accounts for an average of just 11.4 minutes per hour during this 13 hour period, compared to 41.9 minutes of sound recordings, they deliver a third of the value in attracting and retaining listeners.

If these ratios are applied on a *pro rata* basis to reflect the assumed share of advertising revenue generated during the 6:00 a.m. to 9:00 a.m. period and the remainder of the day (Table 9), then, based on these conservative assumptions, sound recordings account for more than 60% of the value of the program content of commercial stations broadcasting in a music format.

TABLE 9
Value Attributed to Sound Recordings and Other Program Content
by Day Part, Weighted According to Commercial Value

Day Part	% of Commercial Value	Program Content Value Attributed to Sound Recordings	Value Attributed to Other Program Content
6:00 a.m. – 9:00 a.m.	25.9%	12.95%	12.95%
9:00 a.m. Midnight	74.1%	49.40%	24.70%
TOTAL	100.0%	62.35%	37.65%

In a 2002 decision on the NRCC and SOCAN pay audio tariffs, the Copyright Board of Canada addressed briefly the issue of the importance of sound recordings relative to other commercial radio program content. The Board stated that:

“[A]lthough music may be what radio mostly provides, that does not mean that it is radio’s most important input. The most important part of programming is not necessarily what consumes the most airtime: sports are crucially important to a television station’s profitability, but generally represent a fairly small share of overall programming. Radio may be designed around the use of music and musical genres but as a cost, and (probably) as a drawing card, on-air talent is far more important. Commercial radio could reduce its expenses significantly by dispensing with on-air talent and making greater use of SOCAN’s and NRCC’s repertoires. If it does not, it must be because radio broadcasters consider that the lost advertising revenues would be greater than the cost savings. On-air talent creates the crucial identity link between station and audience. (Decision of the Board, March 15, 2002, page 10)

In the analysis above, we have not assumed that the importance of sound recordings should be judged by the percentage of airtime they account for. Instead, we made an adjustment to reflect both audience size and the number of commercial minutes, as well as the price of advertising within each day part. Even making the assumption that the on-air talent provides substantially greater benefit than its limited share of airtime suggests, the increased use of sound recordings by CR operators since 1987¹² is not compatible with the conclusion that the

¹² Audley, Boyer and Stohn, (2004, page 16) write: “For the morning and late afternoon periods combined, the current level of use of music content, a weighted average of 69.2% of program time, represents an increase of 24% since 1987 when the corresponding figure was 56%.”

on-air talent delivers greater value to radio stations than sound recording content. Further, the identity of stations is defined primarily by the format of the music they play, as shown in the Circum Network and NextMedia studies referenced above. Finally, the theoretical model presented above allows the inference on marginal value of different program contents directly from the behaviour of CR operators; the inference points to a direction different from that implicit in the Board's comment.

This minimum estimate of the value music stations derive from using sound recordings as program content can then be compared to average programming expenditures related to sound recordings by comparison with expenditures for other elements of program content. Table 10 provides a breakdown of the operating expenses of small, medium and large music stations, over the period 1998 to 2002. The total programming and production costs reported for such stations combine costs related to the stations' sound recording content, with all other programming costs, and in particular those related to spoken word programming.

TABLE 10
Revenue, Operating Expense and Operating Income
of Small, Medium and Large Music Stations, 1998 to 2002

	1998	1999	2000	2001	2002
Small Stations					
Number of stations	140	131	136	143	140
Advertising Revenue	52,459,313	48,194,246	46,990,324	49,179,518	49,088,787
Total Revenue	54,069,214	49,459,721	48,926,672	50,694,488	49,933,861
Operating Expenses:					
Programming/Production	19,736,918	18,274,551	18,090,809	17,538,185	17,858,466
Technical Services	3,925,970	3,461,748	3,586,580	2,915,068	2,852,191
Sales and promotion	13,852,428	13,025,736	11,895,850	12,074,852	12,732,653
Administration and general	19,593,303	17,504,692	16,784,152	16,649,785	16,021,274
Total Operating Expense	57,108,619	52,266,727	50,357,391	49,177,890	49,464,584
Programming / Production Expense as Operating Expense	34.56%	34.96%	35.92%	35.66%	36.10%
Programming / Production Expense as Total Revenue	36.50%	36.95%	36.98%	34.60%	35.76%
Programming / Production Expense as Advertising Revenue	37.62%	37.92%	38.50%	35.66%	36.38%
Medium Stations					
Number of stations	134	134	138	137	139
Advertising Revenue	118,096,101	114,754,309	119,822,737	121,417,541	121,035,105
Total Revenue	121,264,412	118,269,364	122,827,783	125,259,545	124,530,437
Operating Expenses:					
Programming/Production	37,758,733	35,553,187	38,309,132	37,623,550	37,394,059
Technical Services	6,333,011	6,493,782	6,280,628	6,480,212	6,266,446
Sales and promotion	31,322,921	30,199,504	32,704,962	34,823,572	33,841,062
Administration and general	36,554,592	36,002,623	36,106,187	36,759,054	38,752,500
Total Operating Expense	111,969,257	108,249,096	113,400,909	115,686,388	116,254,067
Programming / Production Expense as Operating Expense	33.72%	32.84%	33.78%	32.52%	32.17%
Programming / Production Expense as Total Revenue	31.14%	30.06%	31.19%	30.04%	30.03%
Programming / Production Expense as Advertising Revenue	31.97%	30.98%	31.97%	30.99%	30.90%
Large Stations					
Number of stations	167	179	181	185	196
Advertising Revenue	619,069,576	664,139,865	702,190,599	732,909,909	779,078,893
Total Revenue	625,936,724	673,318,299	716,073,707	743,210,359	789,703,528
Operating Expenses:					
Programming/Production	146,280,780	158,831,236	168,088,614	171,158,505	184,839,101
Technical Services	18,310,490	18,772,081	18,983,005	19,764,043	20,696,700
Sales and promotion	166,917,486	172,853,139	175,148,279	182,084,527	189,816,666
Administration and general	132,966,182	137,740,411	144,215,315	147,248,579	163,402,362
Total Operating Expense	464,474,938	488,196,867	506,435,213	520,255,654	558,754,829
Programming / Production Expense as Operating Expense	31.49%	32.53%	33.19%	32.90%	33.08%
Programming / Production Expense as Total Revenue	23.37%	23.59%	23.47%	23.03%	23.41%
Programming / Production Expense as Advertising Revenue	23.63%	23.92%	23.94%	23.35%	23.73%

Source: Statistics Canada.

The total cost of programming and production for all music stations combined represents a slightly smaller percentage of the revenue of these stations in 2002 than it did in 1998 (24.9% in 2002, compared to 25.1% in 1998). As Table 10 indicates, programming/production expense as a percentage of revenue declined slightly for small and medium stations, while remaining virtually unchanged for large stations over this period.

The total programming and production expenditures of music stations can then be divided into expenditures related to sound recording content and those related to other program content. The key expenditures relevant to the sound recording content are the music copyright payments made to the NRCC, SOCAN, and CMRRA/SODRAC. Using the percentage rate tariffs in effect in 2002, the amount of these tariff payments can be calculated. They are shown in Table 11 below for small, medium and large stations, and for all stations combined expressed as a percentage of total programming expense and as a percentage of total revenue.¹³ The total amount that broadcasters now pay to the authors, performers and makers of sound recordings for the use of sound recordings represents both a very limited percentage of their revenue and a relatively small proportion of their programming cost. In the case of small stations music copyright payments to all three collectives combined represent 3.5% of revenue and account for just 9.8% of total program expenses. In the case of medium size stations such payments account for 3.6% of revenue and 11.9% of total program expense. For large stations the combined music copyright payments represent 4.9% of revenue and 20.8% of total program expense. These figures seem remarkably low given the dependence of music format commercial stations on sound recordings as the core of their content.¹⁴

¹³ Sources: Douglas E. Hyatt (2004), *Financial Impact of the Proposed NRCC and SOCAN Tariff Rate Increases on the Canadian Commercial Radio Broadcasting Industry*, Exhibit NRCC-4 (pages 21 to 25 for revenue and program expenses). Tariff payments for NRCC and CMRRA/SODRAC are as calculated by Paul Audley & Associates Ltd. (PAA).

¹⁴ Stations incur additional costs in relation to programming their recorded music content. The results of the analysis indicate that these additional expenditures related to music programming do not greatly increase the total amount for the 30 stations that responded to the NRCC interrogatories. See Audley, Boyer and Stohn (2004).

TABLE 12
Music Copyright Tariffs as a Percentage of
Programming Expenditure and Revenue for Music Stations, 2002

	\$000s	% of Revenue	Tariff Payments as % of Program Expense
Small Stations (Revenue < \$625,000)			
Revenue	49,934	100.0	
Program Expense	17,858	35.8	
Tariff Payments			
SOCAN	1,598	3.2	
CMRRA/SODRAC	135	0.27	
NRCC (140 stations at \$100 each)	14		
TOTAL	<u>1,747</u>	<u>3.5%</u>	9.8%
Medium Stations (Revenue >\$625,000 < \$1,250,000)			
Revenue	124,530	100.0	
Program Expense	37,394	30.0	
Tariff Payments			
SOCAN	3,985	3.2	
CMRRA/SODRAC	434	0.35	
NRCC (139 stations at \$100 each)	14		
TOTAL	<u>4,433</u>	<u>3.6</u>	11.9%
Large Stations (Revenue > \$1,250,000)			
Revenue	789,704	100.0	
Program Expense	184,839	23.4	
Tariff Payments			
SOCAN	25,271	3.2	
CMRRA/SODRAC	5,338	0.7	
NRCC (196 stations)	7,863	1.0	
TOTAL	<u>38,472</u>	<u>4.9</u>	20.8%
All Stations			
Revenue	964,168	100.0	
Program Expense	240,092	24.9	
Tariff Payments			
SOCAN	30,854	3.2	
CMRRA/SODRAC	5,907	0.6	
NRCC (196 stations)	7,891	0.8	
TOTAL	<u>44,652</u>	<u>4.6</u>	18.6%

From detailed data on a sample of 30 radio stations, Audley, Boyer and Stohn (2004) have estimated that if all existing rights were exercised and no concessionary rates existed and all repertoires were eligible, then music copyright payments would rise to 9.4% of revenue rather than 4.6% as shown in Table 12. Other music-related expenditures would stand at 1.94% and other programming expenditures at 18.34% of revenue. Total programming expenditures would then be 29.68% of revenue rather than 24.9% as shown in Table 12. On this basis expenditures for talk programming would represent 61.8% of programming costs (18.34% ÷ 29.68%), while music copyright and additional music-related spending would represent 38.2% of programming costs, which would then amount to \$286.2 million.

TABLE 13
Adjusted Comparison of Sound-Recording Related Expense
and Other Program Expense

	\$'000,000	% of Program Expense
Sound Recording-Related Expense	109.3	38.2
Other Programming Expense	176.9	61.8
Adjusted Total Program Expense	286.2	100.0

Since the contribution recorded music makes to the ability of music stations to generate commercial revenue is conservatively estimated at 60%, the current level of payment for the use of recorded music requires a significant adjustment. If music stations spent 60% of their programming budgets on recorded music, reflecting the benefit such stations derive from using recorded music as their primary program content, then payments for the use of recorded music (including both music copyright payments and additional music-related expenditures) would represent 27.5% of revenue.

The total payments related to the use of sound recordings as an input to the program content falls far short of reflecting the value rights holders in sound recordings provide and the benefit music stations derive from their use, as one can infer from the observed behaviour and decisions of CR operators themselves. The conservative approach taken above led to a

conclusion that sound recordings used as feature program content contribute more than 60% of the value of the program content on music stations compared to less than 40% for the other elements of program content, including on-air talent, newscasts and surveillance information such as weather and traffic, etc. Using a 60/40 assessment of the relative value of recorded music compared to other program content to make provision for paying equitable remuneration for sound recording use and keeping the adjusted cost of non music content at \$176.9 million, the breakdown of program content expenditures would be as follows.

TABLE 14
Revision of Sound Recording and Other Program Content Expenditures
Necessary to Provide for Equitable Remuneration for Sound Recording Use

	\$'000,000	% of Program Expense
Sound Recording-Related Expense	265.3	60
Other Programming Expense	176.9	40
Total Program Expense	442.2	100.0

Excluding the 1.94% of revenue allocated to music-related costs, music copyright payments would represent 25.6% of revenue, that is, a total of \$247.0 million, which would represent equitable remuneration for both the communication rights and the reproduction rights of authors, performers and makers of sound recordings – assuming that all repertoire of each of the three classes of rights holders qualifies for payment, no concessionary tariff rates are available, and all amounts potentially owing are claimed by rights holders. When all corrections and exemptions in the context of the Canadian *Copyright Law* are taken into account, the total payments for the communications rights only would amount to \$127.8 million or 13.26% of revenues. This is to be compared with the amount of \$44.7 million or 4.6% of revenues appearing in Table 12 (for 2002).¹⁵

¹⁵ The October 2005 decision of the Copyright Board of Canada in the related case *Public Performance of Musical Works 2003-2007 and Public Performance of Sound Recordings 2003-2007 and Public Performance of Music* would have raised the copyright payments for 2003 from 41,729,000\$ to 52,917,000\$ (59,066,000\$ excluding a special statutory exemption clause). This decision was contested in Federal Court by the Canadian Association of Broadcasters. By order of the Court, the decision is presently reconsidered by the Board.

4. CONCLUSION

All inputs or factors of production used in generating (advertising) revenues in the commercial radio industry as in any other industry should be properly compensated at their respective competitive equilibrium price levels. If one input, such as sound recordings, were priced below [or above] its competitive equilibrium level, then that input would likely be over [or under] utilized, and other inputs, such as direct labour and/or capital, could benefit from partially capturing that input's, that is, the sound recordings' contribution to the value of the commercial radio operators and industry, thereby generating a socially costly misallocation of resources.

Such misallocation of resources is apparent in the statement of the Copyright Board in its decision of October 2005, page 11: "Music is inexpensive; at most, it represents one fifth of a station's programming expenses. Spoken word is not. On-air talent is generally well paid. News and public affairs programming is expensive to produce. This may explain why broadcasters have repeatedly asked (and obtained) from the CRTC that spoken word content requirements be reduced."

However, one must distinguish between total cost and marginal cost of music. A zero marginal cost for using sound recordings in commercial radio is appropriate as sound recordings are clearly information goods in the economic sense (high fixed cost and small even zero marginal cost). What is less appropriate is that its total cost, obtained as a percentage of revenues, be so low, namely as shown in this paper by a factor of 3!

5. REFERENCES