Money in, money out: Lessons from CMOs in allocating and distributing licensing revenue

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Summary

How to move money "in" from the consumer (via the distributor) and "out" to the creator is not a new challenge for music streaming services. Furthermore, many collective management organisations (CMOs) have already successfully identified, addressed and resolved it. The simple mathematics required to allocate revenue among diverse rights holders must be qualified by statistical rigour if it is to be done both efficiently and equitably. But recent literature has arguably focused on optimising perceived equity while neglecting efficiency. Will Page, Director of Economics at Spotify, and David Safir, formerly Head of International Relations at PRS for Music and Vice-President, International at ASCAP, authored a discussion paper for the Society for Economic Research on Copyright Issues (SERCI)'s annual conference in July on the lessons from CMOs in allocating and distributing licensing revenue. The two authors have kindly given their permission for Ovum to reproduce the paper.

This discussion paper begins by reviewing how CMOs have for over a century responded to the challenge, proceeds to analyse the perennial trade-offs licensors face in allocating and distributing money and concludes with a critique of a recently proposed alternative model. As proprietary technology enables licensors to track the path of net revenue to rights holders (whether labels, performers, creators or their publishers) with unprecedented granularity, there is arguably as a result more efficiency and more equity for all concerned.

Fundamental differences between CMOs and streaming services

Before debating "user-centric" vs. "pro rata" distribution models, it is essential to appreciate what CMOs have achieved with blanket licensing for over a century. Only then can we objectively assess not just what works but what is transferable to today's streaming companies. At the outset, we must accordingly acknowledge three fundamental distinctions between the traditional CMO and contemporary streaming services:

- CMOs are invariably owned and controlled by their members or affiliates; streaming companies are enterprises owned and controlled by their shareholders.
- CMOs are representatives (or agents) of rights holders operating in the B2B wholesale market; streaming companies are customers of rights holders operating in the B2C retail market by providing access to music.
- CMOs represent and/or administer the rights of members or affiliates; streaming companies license and exploit such rights directly or via CMOs by providing access to music (funded by customers' subscriptions and/or advertising revenue).

These are of course not only fundamental differences between CMOs and streaming services but essential functions of any CMO regardless of its financial structure, distribution rules or the legal and legislative context in which it operates.

CMOs and principles of distribution

The distinctions above relate primarily to the theory of "money in" but in practice rights holders, licensees and regulators are primarily concerned with "money out". We therefore now turn to the principles that underpin distribution, aka "money out" (see endnotes 1 and 2).

CMOs governed by their members are duly obligated to distribute licence revenue (net of administration costs) in an objective and equitable manner. Moreover, CISAC requires transparency in distribution. Many CMOs duly pre-allocate fixed proportions of net revenue among categories of members (e.g. 50% of performing rights revenue to authors, 50% to publishers); among categories of rights (e.g. 75% of streaming revenue to performing rights, 25% to mechanical rights – even if collected under a composite tariff); and/or by reference to "subjective" criteria (e.g. a work's complexity or orchestration) regardless how often or where it is performed.

Some CMOs "follow the money" by distributing net income from a given revenue source (e.g. radio) solely to the works performed by that source, while others may cross-collateralize by, for example, re-allocating net income from the classical concert pool to the pop concert pool.

CMOs administering perennially popular repertoire may choose to reward past success with current revenue, typically by setting aside a share of current distributable revenue for works whose cumulative success is recognised and valued above (any) current performances.

Many CMOs still operate under legacy business rules, using methodology and processes developed in an era when granular usage data was neither available nor required. In these circumstances, allocation and distribution of revenue is a hostage to subjective criteria.

Methods and processes of distribution

Trade-offs between equity and efficiency are integral to and unavoidable in the allocation and distribution of licence revenue. A CMO may choose to distribute more revenue less equitably or less revenue more equitably. But, as blanket licensing gives way to transactional licensing, many have deferred the pursuit of equitable treatment to focus instead on tools and processes to deliver the efficiency rights holders, intermediaries and consumers demand.

Distribution rules may enable and even encourage CMOs to re-allocate revenue not only to ensure equitable treatment among diverse rights holders and repertoire but also to pre-empt actively promoted or covertly revalued works or genres from "scooping the pool". Any CMO's distribution committee is explicitly responsible for ensuring both equity and democracy.

The application of statistical methods

In the absence of timely, authoritative, comprehensive performance data, CMOs apply statistical methods when surveying, analysing and crediting performances, most commonly by using a sample rather an incomplete census of actual performance data (e.g. three days per month of broadcast logs) but often by analogy (e.g. distributing revenue from background music by reference to sound-carrier sales) and/or by distributing revenue attributable to unidentified works over identified works from the same source in the same time-period.

The weighting of works and performances

Valuation of performances by medium ("music usage") ensures that, regardless of audience size, a three-minute work performed to illustrate a documentary about its composer earns more than the same work performed as background to a news item; valuing performances by reference to their role in an audiovisual work ("music context") means music earns more as a feature or theme of a programme than when performed as background underscore; and valuation by reference to sequence of performances ensures that a work performed by a headline act in a live concert will invariably be credited more than a work (of the same duration) performed by a supporting act and a vocal more than an instrumental performance.

Some performances are more equal than others

Valuation by time of day means that a three-minute performance in prime time earns more than a three-minute performance at 2am to an inevitably far smaller audience; while degressive scales, premiums and bonuses are used to ensure respectively that the 500th performance of a station ID (e.g. before the traffic report) is paid less than any of the first 499; that the 500th performance of a hit song is paid more than any of the first 499; and that the first public performance of a work in a given medium (e.g. a film theme) is compensated for having attracted a larger audience (and presumably more lucrative advertising) to the licensee.

The revenue distributor's dilemma: equity vs. efficiency

Having examined the CMO approach to "money in - money out", we now turn to the current debate about how streaming services confront the same dilemma. Before examining the most recent literature on this complex topic, it is important to acknowledge four inescapable trade-offs which not only key players but all decision-makers have to confront.

- **Electoral systems** pit equity against efficiency: the UK's "first-past-the-post" system is efficient and simple to understand but invariably leads to the majority of electors being governed by a party they did not support. By contrast, the Danish version of proportional representation, while more complex, produces a "fairer" outcome. The trade-off is between cost, complexity and confusion and an (intended) more equitable outcome.
- **Gym pricing** sets equity against efficiency by offering access to all machines or none for the same bundled subscription. However, should a member choose to use the treadmill exclusively, is equity served by accruing the entire subscription to its manufacturer? The counter-argument suggests that such a member is unlikely to join a gym with only one machine; so the option value of access to other apparatus needs to be considered.
- **The prisoner's dilemma** helps to illustrate moving from the theory to the practice of user-centric distribution. In a scenario where one rights holder (or aggregator) advocates a user-centric model of distribution while others retain the pro rata model, key players are forced to trade off one party's equity for another's efficiency. Given issues of antitrust, competition and (implied) collusion, a regulated prisoner's dilemma is difficult to resolve.
- **Knowns and unknowns** characterise the fourth dilemma in attempting to balance efficiency and equity both for the individual and the group. A streaming company will know how much it has paid each rights holder; it will not know how much its competitors or other licensees have paid. Moreover, that same rights holder is unlikely to know how much was paid to other rights holders, including co-writers of his work. Redistribution via user-centric is invariably hamstrung by these unavoidable trade-offs.

Comparing user-centric with pro rata

Thus far, we have outlined the singular characteristics of the traditional pro rata distribution model associated with collective administration. The most pertinent of these characteristics are reflected in the unavoidable trade-offs between various aspects of efficiency and equity.

Notwithstanding intensive debate among professionals, academic interest in alternative distribution models has been sparse, with just two significant publications from 2014 arguably already obsolete (see endnotes 4 and 5). Hence we enthusiastically welcome – and have chosen to analyse – the Finnish 2018 paper *Pro Rata and User Centric Distribution Models: A Comparative Study*. Written by Jari Muikku of Digital Media Finland with statistical analysis from Dr. Pradeep Durgam from Aalto University, it analyses the distribution of licensing revenue (among artistes) under these alternative payment models (see endnote 5).

Finland's music business is arguably both an early adopter and early adapter; IFPI has reported three consecutive years of streaming-driven growth of Finnish recorded music revenue, culminating in its industry passing the 50%-digital-revenue milestone in 2017.

The paper recalls that, under pro rata, all of a streaming service's net licensing revenue (after administration costs) is distributed among tracks streamed pro rata to total streams (see Figure 1).

Figure 1: Formula for the pro rata calculation method for an individual track

$$\frac{\text{Total no. of streams of Track A}}{\text{Total no. of streams}} \times \text{Total revenue}$$

Source: Pro Rata and User Centric Distribution Models: A Comparative Study

The paper then turns to the user-centric model, whereby each user's subscription revenue (after administration costs) is allocated exclusively to the tracks streamed; hence the artiste's remuneration comprises only revenue from that artiste's listeners (see Figure 2).

Figure 2: Formula for the user-centric calculation method for an individual track

$$\frac{\text{No. of streams of Track A listened by User 1}}{\text{No. of total streams listened by User 1}} \times \text{Total revenue from User 1}$$

Source: Pro Rata and User Centric Distribution Models: A Comparative Study

Using Spotify data on Finnish premium subscribers' streaming patterns, the paper finds that the less a track is streamed, the more that artiste benefits under the user-centric model (see endnote 6). Hence, top-tier artistes received on average 43% less revenue under user centric – their shortfall trickling down to benefit many other artistes' tracks (see endnote 7).

While the paper takes several steps forward, it notably eschews discussion of three pivotal factors essential to contemplating moving from academic theory to commercial reality:

- The impact of user-centric analysis on those less frequently streamed tracks may change when factoring in the behaviour of free (ad-funded) consumers (see endnote 8).
- Clearly, it is difficult to ensure that the redistribution of the 43% no longer accruing to the top-tier 0.4% among the remaining 99.6% is sufficiently progressive, efficient and

equitable. The authors acknowledge that significant variations (+/- 50%) are "not rare".

- Even where the 99.6% stand to receive a bigger slice of the distribution pie under user centric, the pie may itself have shrunk insofar as there are significant financial costs to adopting and implementing user-centric (as against pro rata) distribution.

When comparing models, three key features of streaming services must underpin our analysis. First, streaming services are two-sided platforms connecting artistes and listeners. Second, there is a network effect: the more artistes the more that listeners value the service, and the more listeners the more that artistes value the service. Third, low switching costs mean it is relatively easy to move from one streaming service to another. It is important to recognise the dynamics of the wider marketplace in a scenario where one streaming service moves to user centric while others stay with pro rata distribution.

Muikku's paper argues that under user centric, listeners benefit from transparency as they perceive a link between the money they pay and how much of it accrues to their favoured artistes/tracks. Equity must also be considered insofar as listeners may value their subscription being allocated exclusively among the artistes/tracks they favour. The initial added value for listeners under user centric may be expressed as:

Added Value [Listener] = T + E

Where: T is the value of transparency and E is the value of equity.

However, some listeners may find it inequitable that a given track be awarded significantly different per-stream values when user centric displaces the uniform per-stream value that pro rata produces. In the extreme light-user case, one user streaming just one song once in a given month could generate approximately €5 ($5.69) (the entire net amount distributable from that user's subscription); while in the extreme heavy-user case, the same song streamed multiple times by multiple listeners could generate just €0.00000001 per stream.

In such scenarios, pro rata is arguably more equitable both in principle and in practice, since it generates an average payment in the context of the increasingly divergent consumer behaviour that may be predicted as services expand into more diverse markets.

The added value to the listener of T+E may be negative since a listener may view either model as increasing or reducing equity, even where E is positive. A listener who finds T+E>0 will prefer the user-centric model and be more disposed to subscribe, while a listener who finds T+E<0 will prefer the pro rata model and be less disposed to subscribe. It should also be recognized that listener indifference may be a significant stochastic variable.

Artistes too may have differing views on the added value of T+E. A positive perception may arise from user centric offering a path to remuneration akin to a fan-club model, while a negative perception may arise from losing any intuitive link between the number of times their tracks are streamed and the eventual pay-out. In our model, the change in an artiste's share of licence revenue under user centric may be expressed as P(d).

Finally (and most importantly) we must quantify the costs of transitioning to and maintaining a user-centric model – costs that do not arise under the simpler pro rata arrangement. The most significant of these derives from the need to create a unique account per listener, such that each of over 3 million artistes is linked financially to each individual subscriber. The incremental costs associated with this system, which would significantly impact the net revenue ultimately distributable to all artistes, may be expressed as P(c). The added value to artistes when introducing the user-centric model may be expressed as:

Added Value [Artiste] = P(d) - P(c) + T + E

Where P(d) is the change in payment due to change in distribution model, P(c) is the change in payment due to decrease in net distributable revenue, T is the value of transparency, and E is the value of equity.

If added value is positive, most artistes will choose the user-centric model and may add tracks; if negative, high-earning artistes will reject it and may take their tracks elsewhere.

In approaching the costs issue we can draw upon the practice and experience of CMOs (which are often structured as not for profit). Rather than charge a fixed commission (as is widely assumed), CMOs customarily deduct administration costs roughly equivalent to the actual costs of licensing, collection and distribution. Where these costs increase, net distributable revenue will invariably fall; and while share of net distributable revenue may increase for some rights holders, it may reduce both equity and efficiency for others.

Neither the members/affiliates of a CMO nor the shareholders of a streaming service could be expected to sanction a move from pro rata to user centric if this were the outcome. For an artiste to gain under user centric the extra received from an increased share of the pie must exceed the amount by which the smaller pie reduces it:

P(d) > P(c).

Using the results from the Finnish paper, we can explore the costs and benefits of moving to user centric for those most likely to gain: artistes not in the top 0.4%. Where a hypothetical streaming service reflects the not-for-profit structure of a CMO, the incremental costs of allocation and distribution are passed on to the artiste. If the streaming service has revenue of €100m and administration costs of 30% under pro rata, net distributable revenue is €70m. We can now explore the mechanics of moving from pro rata to user centric.

Recall that the paper, when analysing the impact of moving to user centric, found significant variations between artistes were "not rare". However, it is still helpful to contemplate the average decrease on a top-tier (0.4% – 18 of 4,493 – artistes) revenue is:

- Pro rata: €6.99m of revenue (€70m x 9.9%)
- User centric: €3.92m (€70m x 5.6%)
- A decrease before costs of €170k or 43% for the average top-tier artiste

Now, contemplating how the average artiste outside the top 0.4% is affected by the move:

- Pro rata: €63.01m of revenue (€70m x 90.1%)
- User centric**:** €66.1m of revenue (€70m x 94.4%)
- An increase before costs of €686 or 4.87% for the average artiste outside the top tier

However, the incremental costs incurred in creating and maintaining several million unique accounts linked to several million unique artistes (with both numbers still growing) will – in this plausible model – reduce net distributable revenue. We are intuitively drawn to the tipping point where increased administration costs exceed the benefits of user centric:

Tipping Point = where Old Payment ÷ New Payment < New Distributable %

(100% ÷ 104.87%) < 95.36%

The tipping point occurs when the additional costs exceed 4.64% (100% - 95.36%) of the previously distributed amount (€70m). It will be for the streaming service to decide whether qualitative factors move the tipping point above or below this figure. In this not-for-profit streaming service, where costs are simply passed on, the net distributable amount has contracted to €66.75m; and the average artiste in the tail (if there is a meaningful average) would be no better off under the user-centric distribution model than under pro rata.

Finally, recall that this two-sided market features strong network effects and low switching costs. There is also the crucial role of anchor content, as some artistes (and tracks) disproportionately influence the demand for the service. The simple 2x2 matrix below illustrates the knock-on effects of having more or fewer artistes and listeners. The matrix also helps to conceptualise how the head can indirectly subsidise the tail in media markets: At one extreme, artistes performing anchor content leave a service as it transitions to user centric – followed by an exodus of subscribers. At the other extreme, better rewarded long-tail artistes may be inclined to bring more content to the user-centric service – drawing in more subscribers. What is clear is that one size will never fit all.

Figure 3: Knock-on effects of having more or fewer artistes and listeners

	Step one: More artistes	Step one: Fewer listeners
Step one: More listeners	Step two: Listener benefits: More tracks Artiste benefits: Higher revenue	Step two: Listener suffers: Fewer tracks Artiste benefits: Higher revenue
Step one: Fewer listeners	Step two: Listener benefits: More content Artiste suffers: Lower total revenue	Step two: Listener suffers: Reduced content Artiste suffers: Lower total revenue

Source: Page and Safir

Concluding remarks

This discussion paper introduces and examines aspects of licensing and revenue allocation which the authors consider fundamental to current and future discourse on alternative revenue distribution models: first, the growth of streaming – which has diminished the key role of the blanket licence that underpins traditional licensing and exploitation (for example in broadcasting), recognising nonetheless that CMOs have been dealing with "money in, money out" issues for over a century; second, the four inescapable trade-offs which require both CMOs and streaming services to pit equity against efficiency when contemplating alternative models of revenue distribution; and third, the cost-benefit framework that assesses the quantitative and qualitative consequences of implementing a new distribution model and identifies tipping points where the incremental costs would outweigh the benefits.

The paper is intended above all to stimulate debate about allocating and distributing licensing revenue. As competition law, contract law and information technology evolve and adapt to this rapidly changing market, our cost-benefit analyses will need to be reformulated accordingly. The task of balancing equity with efficiency is not new, nor is it restricted to CMOs and streaming services. Indeed, it is found in many social, cultural and economic transactions from choosing a gym to electing a truly representative government.

Endnotes

1. Swedish CMO STIM is especially transparent and regularly updates its Complete Distribution Rules.

2. US CMO ASCAP publishes an exemplary Survey and Distribution System: Rules & Policies.

3. Clouds and Concerts (2014) User-centric settlement for music streaming: A report on the distribution of income from music streaming in Norway.

4. Rasmus Rex Pedersen (2014) Music Streaming in Denmark: An analysis of listening patterns and the consequences of a 'per user' settlement model.

5. The 2018 study involved the Finnish Music Publishers' Association, the Musicians' Union, the Finnish Society of Composers and Lyricists and the Society of Finnish Composers. It was funded by Finland's Ministry of Education and Culture. It is important to reiterate that while a streaming service licenses and distributes revenue to CMOs, publishers and labels, CMOs customarily re-allocate such revenue among individual members and affiliates.

6. The paper analyses a sample of tracks streamed by Finnish Spotify Premium subscribers in March 2016 (10,000 tracks, 8051 users).

7. The artistes in the bottom 96.6% of streams that earned less under the user-centric model were those listened to by a small number of subscribers who spend a long time listening to their music.

8. The correlation coefficient of -0.769 is significant at 0.01. Simply, this means that the confidence that the observed trend ("user centric" better for tracks streamed less) being observed across all the data is above 99%.

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