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Music streaming: impact of UCPS settlement model

Detailed report

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Public

Summary

As our music listening habits have changed, over the past few years online music services have experienced a steep surge in popularity. Their growing weight in the music economy has raised questions concerning how these companies distribute revenues from subscriptions to their services.

Revenues generated by streaming are currently distributed pro-rata to rights-holders in proportion to their market share, defined as the number of streams generated by the rights-holder's catalogue compared to all streams generated on the platform, according to the Market-Centric Payment System (MCPS). By definition, this distribution method favours acts with the most dedicated audience and contributes towards boosting streaming revenues of tracks listened to by heavy users of online music services. Over the past few years, music industry professionals have been pushing for an alternative model, known as the User-Centric Payment System (UCPS). This model sees the user's subscription fee (excluding taxes) distributed according to the user's actual listening habits: the user's subscription fee is distributed only to the rights-holders that the user has listened to.

Several studies looking at the impact of switching distribution models on streaming revenues and music diversity have already been conducted in France and in Europe. However, they were conducted using different methodological approaches, data ranges and time periods. Therefore, their results are often contradictory, making it difficult to fully analyse, compare and measure results. It is for this reason that the CNM carried out its own study into assessing the impact of switching to the UCPS by using a common methodology.

This study resulted in several conclusions related to (i) the distribution of royalties when switching from the MCPS to the UCPS, including the market share distribution and differences for different ranked tracks, artists, rights-holders and user types; (ii) music diversity by analysing which music genres are promoted, as well as new releases and French produced songs; (iii) the fight against fraud, the impact of music recommendations and implementation costs associated with switching royalty distribution model, which have been analysed qualitatively only.

Switching to the UCPS would enable to align royalty distribution with the respective weight of different user types (defined according to the number of streams) and would limit revenues from being channelled towards streams made by heavy users. It could encourage a redistribution of revenues to the advantage of artists, tracks and genres with a smaller audience share. However, while the changes in percentage seem significant, in reality the amounts in value are limited. Thus, outside the top 10,000th most-played artist all genres combined, the impact of switching to the UCPS would be on average a difference of several euros annually at the most per artist. Switching to the UCPS could encourage a significant redistribution between the most popular genres, to the detriment of rap and hip-hop and in the favour of rock and pop. It could also encourage an increase in the back catalogue's market share (any music released over 18 months ago on an online platform).

The issue of costs related to adopting the UCPS remains to be clarified. If data exchange interfaces remain unchanged, platforms would be responsible for costs incurred developing the UCPS. The two platforms which partnered this study gave estimated associated costs which varied greatly, thus, such costs warrant further and more detailed analysis and estimation. Furthermore, smaller platforms might not be able to absorb these costs and so they could be filtered throughout the whole value chain. Rights-holders (distributors, producers, collective management organisations) could also the bear the costs of verifying reports submitted by platforms (complex operations linked to weightings carried out at user level for UCPS calculations).

The impact of recommendation tools on revenue distribution in the UCPS model must also be expertly assessed: certain rights-holders' representatives have expressed concerns over recommendation algorithms potential to influence streaming behaviour and their lack of transparency. A quantitative analysis of the value share between recommended and self-chosen streams is complex and requires a common definition used by all.

In the fight against fraud, the UCPS would help reduce the impact of one type of existing fraud, whereby click farms are tasked with making the maximum amount of streams for targeted songs and artists. By adopting the UCPS, fraud could evolve towards targeting low or inactive users, or even hacking group pack sub-accounts. The fight against fraud is one of the major challenges facing the music streaming industry. It is essential that platforms be incredibly vigilant to detect fraudulent streaming and greater transparency is required.

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I. Introduction

I.1 Background

The way we consume music has had a dramatic impact on the music industry over the past few years, contributing to the exponential growth of music streaming platforms. From 2015 to 2019, **the streaming market multiplied by four, the number of paying subscribers multiplied by six and global consumption multiplied by four**. In 2019, these music streaming platforms accounted fo**r 59% of music sales (physical and digital)**, giving them a major role in the music economy (source: *L'économie de la production musicale 2019*, published in 2020 by Syndicat national de l'édition phonographique).

The majority of online on-demand music services, which offer access to an extensive catalogue of music, use the **same method for distributing revenues from subscription fees to rights-holders**: the whole amount of subscription fees (excluding tax) is shared between the service provider and all rights-holders, according to a contracted split (percentage) most often established on a country by country basis. Each rights-holder's share is then distributed in proportion to their market share. This amount is calculated by taking the total number of streams of a rights-holder's catalogue and dividing it by the total number of streams on the platform.

The current pro-rata distribution model was initially implemented for technical (linked to royalty calculation data processing) and practical reasons (system used in advertising and adapted to freemium streaming – as the system for paying subscriptions was still under-developed). However, this system has come under **criticism from certain actors in the music industry**, who consider it operates unfairly.

With this in mind, issues have arisen concerning the distribution of revenues generated by platforms and emphasis has been put on the proposal for a **new distribution model based on the individual user's consumption**, resulting in artists being paid more fairly. The issue has plunged the industry into healthy debate, aiming to compare the current "pro-rata" model (Market-Centric Payment System, MCPS) with the new User-Centric Payment System (UCPS). Under the latter, rather than pooling together users' subscription fees and distributing them pro-rata according to each track's number of streams, the individual user's subscription fee (excluding tax) is distributed only according to what that user has listened to. So if 50% of one user's streams were concentrated only on one artist over a given period, that artist would receive 50% of the revenue generated from that user (minus the streaming platform's share).

For those in favour of this distribution method, the main advantages would be:

- **Greater musical diversity**: with the current system, revenue only crystallizes around trending music genres;
- **Restructuring the music landscape**: under the pro-rata system, there is currently heavy focus on urban music production;
- **Remuneration of rights-holders better reflects the individual subscriber's choice**: one of the criticisms of the market-centric system is that users who don't listen to much music online, yet nonetheless pay the same amount for their subscription, don't see their music tastes taken into account when remunerating rights-holders.
- **Greater efficiency in tackling streaming fraud**: with the current system, the main type of fraud comes from click farms which aim to automatically generate large volumes of targeted streams.

One of the French Ministry of Culture's public policy aims is to find a fairer way of distributing royalties to rights-holders, as well as promoting musical and linguistic diversity. Various different studies[1] have tried to compare the current "pro-rata" model (Market-Centric Payment System, MCPS) with the User-Centric Payment System (UCPS). However, **each of these studies was conducted according to different methodological approaches, data ranges and time periods.** These studies on the comparative advantages of the MCPS and UCPS have not lead to any indisputable conclusions: thus, industry players are currently divided over the usefulness of the UCPS and are awaiting data which fully measures the impact to be published.

For this reason, in its capacity as an observatory for the music sector in France, the Centre national de la musique (CNM) has been commissioned by the Ministry of Culture to shed light on the situation by conducting an initial major study across a wide range of industry players. This study is destined to fuel parliamentary discussions and thinking surrounding the audio-visual law which transposes, amongst other things, a European directive that requires greater music exposure on online platforms.

In order to try and reach a shared conclusion, it is imperative that different industry stakeholders align on a common methodological approach for assessing the impact of switching to the UCPS. The CNM aims to develop a common methodology

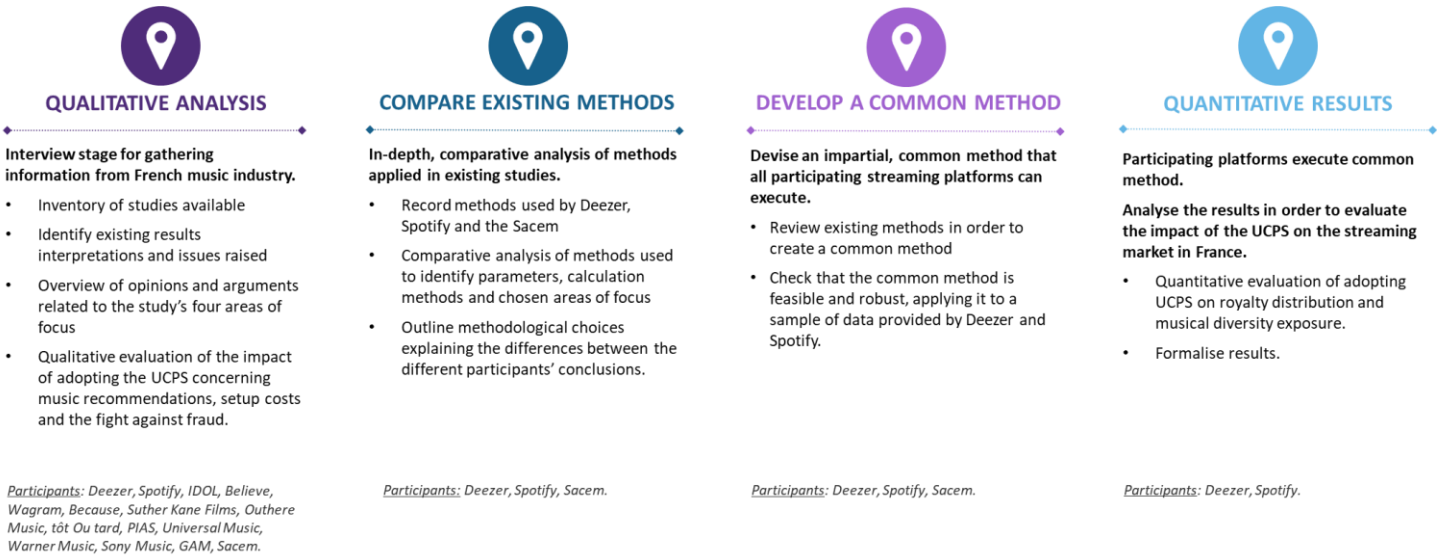
[1] "User-Centric settlement for music streaming" Clouds and Concerts, March 2014.
"Music Streaming in Denmark: An analysis of listening patterns and the consequences of a 'per user' settlement model based on streaming data from WiMP" Roskilde University, 2014.
"Pro Rata and User Centric Distribution Models: A comparative study" Digital Media Finland, November 2017.
Unpublished Internal studies: Deezer, Spotify, Sacem, Merlin.

which will be formed based on questions present in the industry surrounding the UCPS and by assessing existing methodologies. Executing a common methodology and analysing the ensuing results ensures questions surrounding the new model will be answered.

The results will be centred on three major areas of focus: **(i) royalty distribution, (ii) musical diversity and (iii) the impact of recommendations, implementation costs and the fight against fraud.**

I.2 Research conditions

This study was conducted by the CNM in April 2019, with support from Deloitte France consulting firm. The aim is to conduct a quantitative and qualitative analysis in order answers issues surrounding the impact of adopting the UCPS on the streaming market in France. The study is structured as follows:

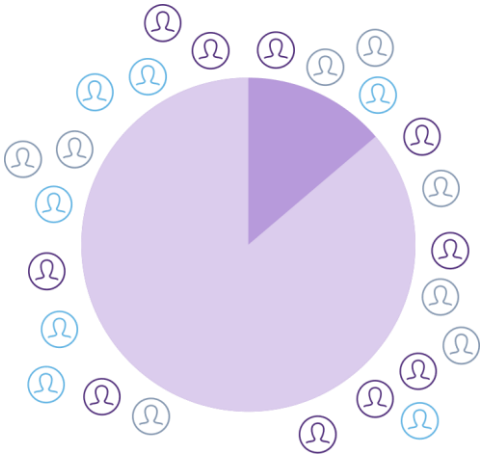


II. Definitions of MCPS and UCPS

Ever since the boom in digital technology, the music industry has been exploring the viability of new economic models through streaming services that having been driving market dynamics in recent years. Two royalty distribution models have been defined: the MCPS (Market-Centric Payment System or "pro-rata" system) which is currently used by online music services, and the UCPS (User-Centric Payment System) which could distribute royalties amongst artists and tracks more "fairly".

The two models are presented theoretically below, regardless of the choice of possible technical implementations or any possible contractual conditions established between the two platforms and rights-holders.

II.1 MCPS model



The Market-Centric Payment System (MCPS) distributes royalties to rights-holders in proportion to their market share, or rather, proportionate to a rights-holder's share of total streams (one stream equates to a listening time of at least 30 consecutive seconds) on the streaming service. On a monthly basis, this model takes into account the following parameters: a track's total number of streams, the total number of streams on the platform that month, as well as the amount of royalties distributed by the platform (equivalent to the contractual share owed to rights-holders from revenue generated by the platform, minus tax deductions).

MCPS Illustration: the total number of all users' streams of one song in comparison to the overall volume of all users' streams.

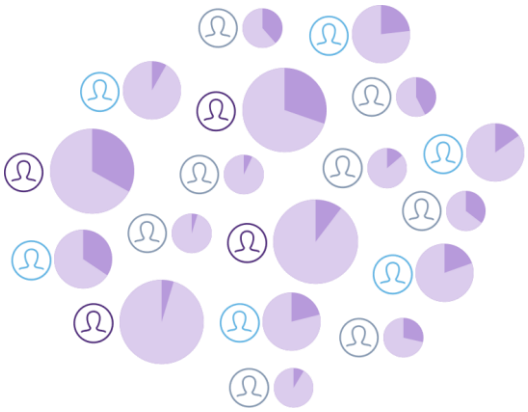
II.1.1 Royalties for a track

The royalties for a track over the period of a month is calculated as the total number of streams of a track divided by the total number of streams on the whole platform. This figure is then multiplied by the total revenue distributed by the platform.

II.1.2 Royalties for a rights-holder

With the Market-Centric Payment System (MCPS), a rights-holder's royalties are calculated as the total sum of royalties generated from all of the rights-holder's tracks.

II.2 UCPS model



The User-Centric Payment System (UCPS) has a different vision. It works on an individual user-level, as the royalties from a user's subscription fee are distributed according to what songs the user listens to (one stream equates to a listening time of at least 30 consecutive seconds) over a given period. Every month, this model measures the following parameters for each user: the user's per-track consumption, total number of streams over the period, as well as the amount of royalties distributed by the user (equivalent to the user's subscription fee minus taxes and the service provider's operational costs).

UCPS illustration: Each user's individual breakdown of the number of times they listened to one particular song in comparison to their overall number of streams.

II.2.1 Royalties for a track per user

The royalties for a track per user and for a given month, is calculated by dividing the the total number of times a user listens to a given song by the total number of streams made by that user over the month period. This figure is then multiplied by the revenue generated by the user.

II.2.2 Royalties for a track

Under the UCPS, the royalties for a track for a given month is defined as the sum of royalties distributed by each user for said track.

II.2.3 Royalties for a rights-holder

A rights-holder's royalties are calculated as the total sum of all royalties from all of the rights-holder's songs.

II.3 Clarifications on the scope of royalty distribution

Online music platforms, in direct relationship with distributors, calculate the amount of royalties generated from streams and pay distributors directly.

They receive a monthly breakdown of royalties per track and the calculation of royalties per artist, based on information provided by platforms, remains relative.

The estimate of royalties paid to artists does not account for contractual conditions with distributors, producers, record labels and artists. These calculations only provide a way of estimating the variation in their share of royalties under equal contractual conditions, given that the calculation of pay is part of private business relations, falling within the freedom of contract between rights-holders.

III. Qualitative analysis of opportunities and hurdles when switching to the UCPS

III.1 Background

Various different industry stakeholders have already conducted several studies relating to the impact of switching to the UCPS on the online music sector. They compare the MCPS (Market-Centric Payment), which is currently used by online music services, with the UCPS (User-Centric Payment System).

Deezer, Spotify, the Sacem, Merlin and other organisations have analysed the impacts of switching royalty distribution models. The results from these studies, lead by industry stakeholders, show greatly contrasting opinions and differing, often contradictory, conclusions.

To summarize, Deezer states that UCPS would have a royalty "trickle-down" effect on artists classed lower down in the rankings, as well as promoting niche genres and domestic creators. Spotify concludes that the UCPS would boost back catalogue[2] entries and international artists to the detriment of independent labels and French artists. The Sacem focused their research more on compositions (rather than recorded music), deducing that the UCPS would favour current top-ranked tracks rather than niche genres. Merlin's study lead to the conclusion that the UCPS would mainly favour catalogues distributed by major labels (Universal Music, Sony Music and Warner Music).

There may be many explanations behind these differing conclusions, as little information has been shared concerning the approach used for each study. Other important information is also seldom specified, such as the areas of scope studied (temporal, geographic, user profiles…), data pre-processing (defining genres, nationality classification…), the royalty distribution calculation process, how the data sample was chosen, or even integrating contractual clauses. Thus, unable to break down each stakeholder's approach in order to identify possible explanations, these differing conclusions prevent us from distinguishing the impacts of adopting the UCPS. An analysis of the reasons leading to these contradictory conclusions will be made in section IV. **Without a common, transparent methodology, results cannot be compared and they remain unreliable.**

III.2 Research conditions

As part of this qualitative analysis, an interview phase was held to gather statements, issues and opinions on the impact of switching to the UCPS.

A wide range of figures from the music industry were interviewed, including: online music platforms, distributors, phonographic producers, artists and some collective management organisations.

A total of 16 people were interviewed between the end of April and June 2020.

III.3 Interviews with industry stakeholders

Firstly, these interviews helped identify those in favour of adopting the UCPS, lead by Deezer. Some benefitted from the model directly (Outhere, tôt Ou tard), while others felt there would be a moderate overall impact on their royalties (Wagram, IDOL). Nonetheless, they all embraced the fair and ethical vision behind the UCPS, as a model which would seem fairer and beneficial for the music industry in the long term.

The *Guilde des artistes de la musique* (GAM, the French Guild of Musical Artists) adopts a critical eye in favour of the UCPS, and wishes to address the topic for the benefit of the industry according to principles of ethics and equality. A change in model would need to be announced in advance so as to give stakeholders enough time to prepare and adapt their editorial strategies if necessary.

The major labels (Universal Music, Sony Music et Warner Music) adopt a similar position, that in, they would be for adopting a brand new model that is an improvement on the current distribution system in place, however they wish to obtain reliable results through global, transparent studies. These stakeholders also stress the importance that these platforms be transparent when it comes to calculating royalties, recommendations algorithms and communicating information to rights-holders.

Meanwhile, certain independent labels are more reluctant to adopt the UCPS. They consider that research done into the model is incomplete at this stage. Implementation costs could be high, and platforms still need to prove that they're transparent and

[2] Grouping tracks with a release date greater than 18 months, from the month in which data was processed. In contrast, tracks released within the last 18 months, from the month in which the data was processed, are considered to be new releases.

willing to cooperate. Some would like to see more comprehensive discussions on royalty distribution, which would include all distribution channels.

Spotify maintains that they are neutral and are focusing their attention on market growth. However, it states that the user-centric model would be a complex solution that would be expensive to implement (technical architecture to develop, impacts on contracts with rights-holders, problems linked to several models co-existing).

Deezer are leading the debate on the UCPS in France and worldwide. They believe the system is fairer for both artists and users (streaming royalties from the user's subscription fee are distributed only to the artists they have listened to that month), and would curb the impact of distorted figures caused by fraud.

The Sacem conducted a study in 2019 and their conclusions were opposite to Deezer's. This can be explained by the major difference in their approach: the Sacem conducted its study through the prism addressing composition (song-writer, compositor and publisher if applicable). The Sacem is continuing its examinations and wishes to obtain results from more specific studies on the topic.

Other important industry stakeholders were approached to take part in the study, but were unable to participate for technical and/or political reasons.

Some of the stakeholders agree with the UCPS mainly for ethical reasons as they see the model being more fair, while the others are awaiting more conclusive results. Most of the stakeholders we met with expressed major concerns over transparency concerning online music platforms' royalty calculations, recommendations and algorithms.

III.4 Shared findings and contradictions

There are diverse and varied opinions concerning streaming platforms' distribution models and the potential impact of adopting the UCPS. The common findings and differences of opinion are summarised below according to the study's four main areas of focus.

III.4.1 Royalty distribution

Firstly, the majority of stakeholders interviewed are in agreement that the current system (MCPS) is a simple, comprehensible system that is easy to implement, whereby the volume of streams and revenues payment are directly linked. However, it is also seen as a model whereby royalty distribution tends to concentrate around the most popular genres, artists and tracks; an aspect accentuated by users who consume intensively. When it comes to freemium[3] users, stakeholders are unanimous in that no doubt is cast on the MCPS as it certainly the best solution for this type of offer. In fact, revenue generated by freemium users are proportional to users' consumption, as they reflect the exposure of listeners to ads.

In addition, for a majority of the stakeholders interviewed, the UCPS would have the virtue of distributing royalties generated by a user only to the tracks the user listens to, according to the definition of the model. This would allow for a "fairer" distribution of royalties. However, like the MCPS, the UCPS has certain limits: this model would not take into consideration the stream duration, which constitutes for some as the main parameter in royalty distribution. Despite being a more or less conceivable solution for the different stakeholders, the UCPS would cause side effects that remain to be determined.

Finally, there is no doubt that contractual conditions have a heavy impact on artist remuneration, whatever model in place. The impact on artist remuneration remains indirect due to the numerous contracts between artists, record labels, distributors and platforms.

Stakeholders in favour of the UCPS evoke the idea that the model would boost a royalty "trickle-down" effect on artists and songs classed lower down in the rankings, and would prevent heavy users' listening habits from significantly impacting royalty distribution.

In contrast, those more reluctant concerning the beneficial impacts of the UCPS point to a more favourable distribution of royalties towards catalogues belonging to major labels and international artists, and negative impacts on "smaller" stakeholders and French artists.

III.4.2 Musical diversity and recommendations

According to some stakeholders we spoke to, the UCPS would reduce the total amount of royalties distributed to top-ranked artists and tracks (on the basis of current consumption) and, therefore, would promote musical diversity, redistributing royalties towards lesser known artists and genres.

[3] This offers allows ad-supported streaming on an online music service (subscriptions are financed by advertising).

Some stakeholders support the fact that the UCPS would favour music genres valued less by the current system (but which have a significant listener base with less-intensive consumption behaviour). They believe more popular genres could be negatively impacted, but this change would be potentially compensated by market growth and converting new users.

Stakeholders not convinced by these arguments point out different results concerning diversity in the broader sense. They believe the UCPS would favour "megastar" artists and not emerging talent or artists from niche genres, would profit major labels' catalogues to the detriment of other industry players, and could be harmful for certain record labels or stakeholders (especially those specialising in "urban" music) whose revenue comes mainly from streaming. The latter are calling for a broader consideration of the remuneration of rights-holders, which would not be limited to only streaming platforms, but would also include other broadcasting channels (radio and television) where the rate of pay or exposure would not be regulated fairly according to music genre.

Independent of the topic of musical diversity, most stakeholders interviewed mentioned the matter of transparency surrounding royalty distribution. Today, **the proportion of streams based on recommendation algorithms (passive listening) varies greatly in estimate depending on the stakeholder**: music platforms have it at between 10% and 20%, whereas certain labels believe it to be at 80%. A quantitative analysis of royalty distribution between recommended streams and self-chosen streams is complex: it requires a shared, common definition of listening categories to be defined, which make it possible to reconcile and compare results from characteristics specific to each platform and which depend on different confidential mechanisms.

Records labels and distributors consider the way music recommendation algorithms work as very opaque. The UCPS is more complex than the MCPS, and could make it even harder for third-party organisations to understand the inner-workings of such platforms. Some of the stakeholders we interviewed were also concerned that platforms will use recommendation algorithms to influence a part of their streams. Indeed, an online music platform could push songs into personalised playlists or even direct listeners towards low-cost catalogues (copyright-free or royalty-free music) or non-musical catalogues to optimise financial performance. Targeting less intensive users (or low users – see VIII. Appendices) would have a strong impact under the UCPS model, since under this model this type of user offers the highest income per stream.

III.4.3 Implementation costs control

Studies rarely look into the Implementation and maintenance costs for a new model. Owing to its definition, the UCPS is more complex and features more variables than the MCPS. It goes without saying that further development is required before it is to be implemented. By keeping identical data transfer interfaces between platforms and distributors, it appears systems changes would be minimal for distributors, yet still present for online music platforms.

Distributors would essentially be responsible for the costs of verifying reposts and calculations submitted by the platforms. In the event that only one platform would apply the UCPS, rights-holders would have to adapt their systems to accommodate more than one data format, which would incur additional costs to take into consideration. Having tested the feasibility of the UCPS, Deezer would be prepared to switch to this model. Development costs would be moderate (estimated *a posteriori* at 240 man days) and would be fully covered by the platform. However, no other platform is at the same stage. Spotify estimates that implementation costs could lead to a 2% to 3% increase in operational costs. Other smaller platforms have not yet estimated the eventual costs or do not have the capacity to envisage such modifications to their current systems. **What's more, development costs could turn out to be significant and would be split across all the whole industry value chain.**

For some industry stakeholders, the current level of transparency is already too low, and the UCPS would add further complexity and opacity. With a more sophisticated model, verifying platforms' results under the UCPS would be more complex. **Transparency between the platforms and rights-holders would be required, by making granular data available and auditing the platforms' calculations** (UCPS weighting value depending on different user-based parameters: number of streams, subscription fee price, potential share).

The change in model could also result in additional communications and admin costs for record labels and distributors in their interaction with their artists. They will have to explain to them the new rules and parameters that would determine royalty distribution. As a consequence, contracts between artists and rights-holders could also be renegotiated.

Finally, there is the question of operational changes when adopting a new model. Transitioning too fast could be risky, making it hard to manage any resulting impacts (e.g. modifying contracts, absorbing implementation costs, change in editorial strategy). Meanwhile, transitioning too slowly could result in the two systems running simultaneously and thus unnecessary technical costs.

III.4.4 Fight against fraud

It is of unanimous opinion that implementing the new model will certainly not eliminate fraud from streaming platforms. The UCPS could help curb fraud in which illegal bots artificially inflate the number of streams, as well as streaming from hacked accounts. Some participants interviewed believe that the UCPS will help reduce the impact of this type of fraud, as one account cannot generate more income than the subscription amount linked to it, thus a greater number of accounts would need to be hacked. Whereas with the current MCPS, fraudsters excessively generating streams has an impact that exceeds the user's subscription fee amount.

Nevertheless, with the arrival of the new model, new fraud techniques will undoubtedly emerge. Industry stakeholders believe that the **UCPS could reduce existing types of fraud, cause new techniques to emerge but could not fully get rid of the global problem.**

Some believe the UCPS could make it harder to identify fraudulent practices. In fact, with the MCPS, the most popular type of fraud which entails generating the maximum number of streams is widely known and easily detectable. With the UCPS, fraudulent techniques would become more sophisticated and elaborate. These new techniques would concentrate on mass account hacking, targeting low or inactive users (see VIII. Appendices), or hacking unused Family Plan sub-accounts.

III.4.5 Conclusion

Our interviews showed that participants had a strong difference of opinion on the impacts of switching to the UCPS – be it the royalty distribution, musical diversity, the fight against fraud or implementation costs.

Regarding royalty distribution, the impact of the UCPS remain to be defined, but it is certain that side effects will appear and will be present (heavy losses for some stakeholders). It should also be noted that the impact on artists' remuneration would remain indirect and partial due to the contracts between artists, record labels, distributors and platforms, as well as the various sources of income present.

With regard to evaluating the impact on musical diversity, two important elements emerge from our discussions: (i) the first is the lack of a shared nomenclature for music genres, which makes it difficult to analyse the impact of the UCPS in terms of music genre. This lack of nomenclature is explained by the fact that when each online music platform was created, they defined their own music genre categories. Today, the latter constitute a competitive advantage in the market and could not be brought together within a common nomenclature; (ii) the second relates to streams influenced by recommendation algorithm specific to each platform and which impact musical diversity. Adopting the UCPS could encourage some platforms to direct users to "low-cost" content through the use of recommendation algorithms.

The cost of implementing a new system, in terms of manpower, technology and time, has not yet been assessed in precise detail. The platforms should incur the costs; however, they do not rule out the notion of incorporating these additional costs in admin costs deducted from rights-holders.

The issue of the fight against fraud goes well beyond the topic of royalty distribution models. This is one of the main issues for music streaming, and a topic on which rights-holders regularly question platforms. The UCPS can not be considered as foolproof against all types of fraud occurring on such platforms. It would help reduce certain types of fraud (e.g. click farms) but would inevitably cause new types of fraud to emerge.

IV. Comparative analysis of existing methodologies

In order to better understand the disparities between the different conclusions, a closer look at the different methodologies used in existing studies was required. While the concepts behind the MCPS and UCPS are well known, the different conclusions could be explained by the different data used, calculation formulas, or even the areas of focus specific to each study.

We examined the methodologies participants (namely, Deezer, Spotify and the Sacem) used to assess the impact of switching to the UCPS. Analysis focused on the overall approach, data collected, data processing, indicators evaluated, calculation methods, results, as well as any difficulties encountered in carrying out said study.

This enabled us to clarify the conditions under which each study was conducted, identifying in particular the differences in approach and the contradictions in their conclusions.

IV.1 Comparing methodologies

IV.1.1 Different scopes …

	Deezer	***The Sacem***	***Spotify***
Geographic scope	French consumption (Deezer)	French consumption (Deezer)	Global consumption (Spotify)
Time-related scope	2018 and 2019	1st quarter, 2019	H1 2018 to H1 2020
Type of user scope	All paying subscribers	All paying subscribers	Standard Premium subscribers
Music scope	Whole catalogue (Deezer)	Whole catalogue (Deezer)	Whole catalogue (Spotify)

IV.1.2 and different data…

The data and scopes chosen for each study vary between the different participants.

Deezer and Spotify use a large number of scopes: however, they do not use shared common definitions (music genres, age groups, subscription type, etc.) and they did not share with us the exhaustive lists of their parameters, which probably differ.

The Sacem relies on Deezer for obtaining data. It carried out its own studies on Deezer's data, which Deezer had calculated beforehand, aggregated by track and by service. This aggregated data includes little information on tracks, artists and rights-holders, and nothing on users (e.g.: age, type, etc.) or streams (e.g.: stream duration, etc.).

IV.1.3 and incomparable areas of focus…

	Deezer	***The Sacem***	***Spotify***
Areas of focus	Artists (top-ranked)	-	Artists (top-ranked)
	Rights-holders (reproduced *ad hoc*)	-	Rights-holders (majors *vs* indies)
	Music genres (diversity, local content)	-	Music genres (local content)
	Types of user (age, consumption)	-	-
	-	Tracks (top-ranked)	-

IV.1.4 resulting in different conclusions

	Deezer	***The Sacem***	***Spotify***
Impact of UCPS on artists	Trickle-down effect of revenue from the top of the pyramid down Favours emerging artists	-	Promotes the Top 2,500 artists French artists at a disadvantage
Impact of UCPS on rights-holders	Impact varies depending record label specialisation	-	Favours major labels
Impact of UCPS on music diversity	Favours domestic catalogue Redistribution favours niche genre	-	-
Impact of UCPS on tracks	-	Favours popular tracks and new releases	-

IV.2 Takeaways

These publicly released findings and conclusions do not lead to a general consensus on the impact of switching to the UCPS. Few studies on the topic have been carried out and their methodological approaches lack clarity.

The findings from each study are based on different time periods, geographical zones, subscriber types, dimensions, and areas of focus. This makes it difficult to compare conclusions and thus impossible to distinguish the true impact of adopting the UCPS.

In addition, there is no common process for dealing with negative effects (multi-accounts, freemium, etc.). In order to compare results, a common methodology must be established, aligning participants on a common scope, identical calculation methods and standardised areas of focus.

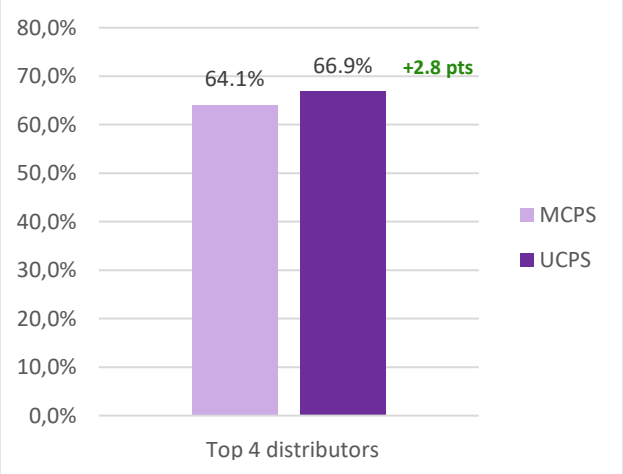
Finally, it is important to consider studies on adopting the UCPS as a marketing argument for both pro- and anti-UCPS music industry stakeholders. When asked to contribute to the analysis and share their data, studies and methodologies, some stakeholders expressed reservations and not all agreed to fully share their data.

At this stage, in view of the conclusions drawn by the studies carried out and the methodologies applied, it is not possible to rule on a definitive and unanimous conclusion relating to the impact of the UCPS on royalty distribution in the music streaming market.

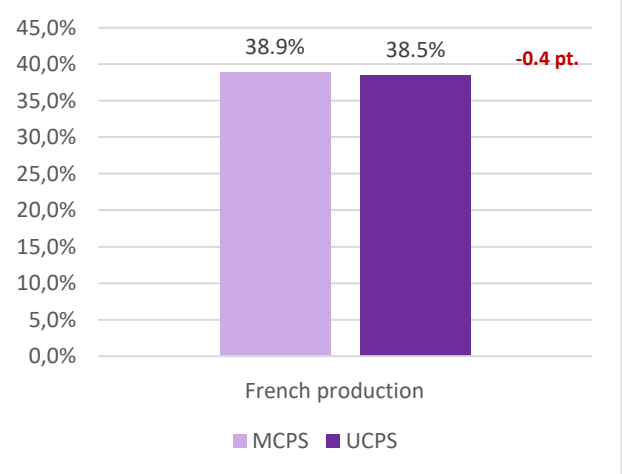
IV.3 Additional contributions

Spotify carried out its own methodology on a reduced scale compared to our study, which included all users in the French market with a Standard Premium subscription. It features specific areas of focus and parameters: royalty distribution for the top four distributors, the impact on French production (recordings identified using the ISRC code, some artists' codes are adjusted internally) and the effects of the UCPS on top ranked artists (according to Spotify's own tiering system).

Spotify wanted to test a ranking method for artists, in addition to that of the common methodology (ranking according to the number of streams over the month, cf. graph C), namely a ranking according to the number of streams over the last three months, enabling them to offset occasional consumption behaviour, such as the release of a new album (cf. graph D).

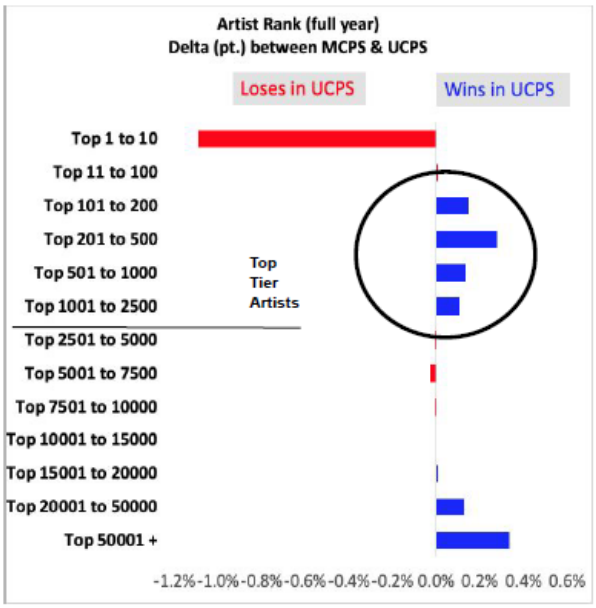


A - Market share of top 4 distributors (Spotify, 2019)

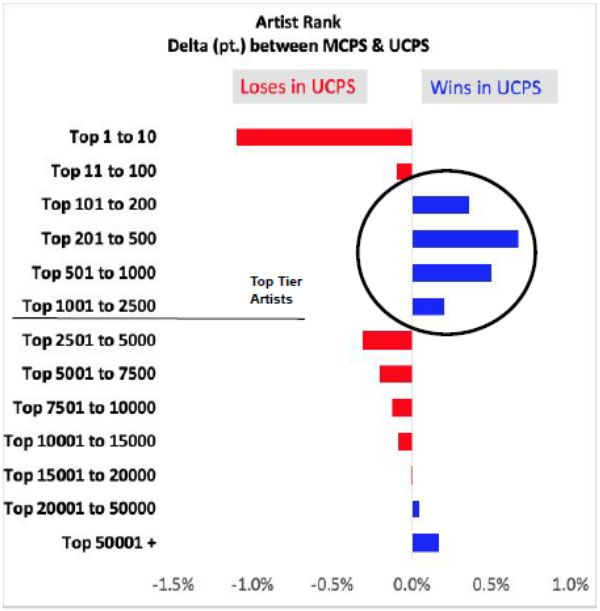


B – Market share of French-produced music (Spotify, 2019)

Graph A above represents the impact of the UCPS on the market share of the four main distributors on the platform. The latter would see their market share grow by 2.8 percentage points for 2019. Graph B represents the impact of the UCPS on French-produced music compared to foreign production. According to Spotify, if the UCPS was adopted, French-produced music would lose 0.4 points of the market share of royalty distributions calculated for 2019.



C – Change in amount of royalties per artist according to their ranking under the UCPS (ranked according to the number of streams during the last month, Spotify, 2019)



D - *Change in amount of royalties per artist according to their ranking under the UCPS (ranked according to the number of streams over a rolling three-month period, Spotify, 2019)*

The results (graphs C and D) highlight a significant loss for the top-ranked artists and various impacts for the remaining artists. By focusing its analysis on narrower groups, Spotify is able to distinguish more nuanced impacts (particularly within the 2,500-20,000 group).

V. Developing a common methodology

In order to assess the global impact of the UCPS, it is essential that streaming platforms are united around a common methodology so that their results can be compared and cross-analysed.

The CNM, with support from Deloitte, has developed a common methodology that allows the various participating music streaming platforms to perform a comparable analysis. Presented in this section, it will provide a framework for the calculation and analysis processes for measuring the impact of the UCPS, thus making each platform's results comparable from a common and impartial basis.

V.1 Scope

Data processing and analysis carried out in the common methodology will cover different scopes.

Following discussions with the streaming platforms, it was decided that carrying out an analysis of 2020 would include unusual streaming behaviour biases linked to the coronavirus crisis (lockdown, music event cancellations, social and leisure facility closures, etc.). Therefore, **analysis based on the common methodology covers the 2019 calendar year,** thus streams made between 1st January 2019 and 31st December 2019.

The common methodology was applied to the French market only, covering consumption behaviour of all users with a paying subscription. Only freemium users were excluded from the study. This decision stems from discussions with industry actors. The current pro-rata model is coherent with the freemium offer as advertising revenue is proportional and dependant on user consumption. Therefore, it is not necessary to evaluate the impact of the UCPS on this scope.

The **whole music catalogue (excluding podcasts) was analysed** to ensure an overall assessment of the the impact. Each platform has their own specific music catalogue dependent on partner distributers.

V.2 Data

The data used for the methodology's calculations and analysis includes parameters relating to users (unique identifier, age, subscription type, subscription fee…), streams (unique identifier, date, duration…), tracks (unique identifier, country of production, music genre…), artists (unique identifier, main music genre…) and rights-holders (unique identifier, type…).

V.2.1 Methodological choices and limitations

The section presents the outline of the common methodology as well as its limitations. A lack of shared common definitions or nomenclature for certain complex notions implies choices and trade-offs were required to establish a common methodology.

The common methodology is applied to data from online music platforms.

The **rights-holder is identified** according to a code identifying the authorised distributor of the rights to a track. This user name enables the distributor to be identified, and not the producer, writer, composer or publisher. Furthermore, this special feature prevents the producer behind the contractual relationship with the supplier, or even independent labels distributed by the major labels, from being identified. Platforms are well aware of this issue however no workaround is possible to date.

In the common methodology, a **song's country of production** is an essential parameter which enables the visibility and exposure of French-produced songs to be measured, amongst other things. The country of production is identified using the country code listed with the ISRC for every recording. The ISRC code identifies the registered country in which a song was recorded. Despite the limitations (e.g. a new ISRC code issued when the producer changes) inherent in the use of the ISRC code in identifying the country of production, it is the most reliable, commonly used and widely available form of information available to date.

A **track's release data** can be used to distinguish new releases from tracks that are part of the back catalogue. In theory, this piece of information is unchanging. However, in practice, a track's release date on a streaming platform may correspond to the date first historically released, the date first released on a specific streaming platform, or the release date of a compilation which the song features on, etc. It is the distributor who declares this piece of information and it is difficult to correct. Within the framework of the common methodology, when a track's first release date is missing, the date the track in question was first released on the streaming platform will be applied. As such, in this study, some tracks will be categorised as new (release date less than 18 months ago) while their release date is in fact earlier than the threshold defined for this category. Streaming platforms are well aware of this approximation, and no other more reliable solution has been developed to date.

The **language in which a song is sung** is a very important piece of information for monitoring the progress of and understanding the exposure of French-speaking content. However, there is no shared classification or exhaustive metadata for this piece of information (language in which song is sung, track's lyrics…) and data is currently extracted on an experimental basis by a small

number of actors in the music industry. The ISRC code for the country of production cannot be used to determine the language in which a song is sung. As a consequence, the common methodology will not carry out an analysis based on the information concerning the language in which a song is sung.

Music genres are subjective notions for which there are no shared definitions used by the entire music industry to date. Nonetheless, this piece of information is vital for studying the impact of switching to UCPS on music diversity. In the absence of common definitions and an up-to-date list, the music genres used in the common methodology are those used by streaming platforms. In this study, genre classifications are specific to each platform. Consequently, comparisons between information based on music genre cannot be made between platforms.

This constraint means a methodological choice has to be made when accounting for genres. Take the following example: track 1 (pop), track 2 (pop, rock), track 3 (pop, rock, pop rock); the genres will be recorded are follows: 50% pop (3/6) 33% rock (2/6) and 17% pop rock (1/6).

Opening dialogue on indicators for monitoring musical diversity exposure and visibility will lead to common definitions which could subsequently enhance this common methodology.

Diversity amongst the top-ranked artists can be measured in various different ways. One way could be to look at the different **artist nationalities** represented in the different tiers. However, this information is not always communicated to platforms and is relatively difficult to verify. Consequently, artist nationality will not be taken into consideration for this study.

Results obtained will have been compiled from archive data. It would be necessary to evaluate the impact on the French market over the years to come by predicting on streaming consumption and streaming behaviour based on economic growth data from mature markets. However, this would be a huge undertaking and imply extended delays. Such forecasts could provide an estimate of the time needed to recover from losses linked to adopting the UCPS.

V.3 Data and definitions

A detailed list of data used, as well as their definitions and calculation methods, can be found in the appendix (cf. section VIII).

V.4 Distribution models

In order to analyse the different distribution models, they must be compared against the same standard: the market share. Breaking down royalty distribution by calculating market share means the impact of different models can be evaluated according to a common and comparable measure between models.

The market share allocated to tracks, artists or rights-holders will be calculated using streaming platforms' streaming data, by calculating the royalty distribution for each stream (one stream equates to a listening time of at least 30 consecutive seconds) according to the definition of the distribution model (and its own specific parameters which govern royalty distribution). This will ensure a sound comparison of models (MCPS *numeris vs* UCPS *numeris*, MCPS *temporis vs* UCPS *temporis*).

V.4.1 Analysis approach

The common methodology integrates the notions of *numeris* and *temporis* values for the two models compared (the current pro-rata model and the user-centric model).

- **The *numeris* approach counts the individual number of streams** (a listening time of 180 seconds corresponds to one stream). It is the most commonly used approach and is currently used by the large majority of online music platforms;
- **The *temporis* approach counts streams according to their duration** (in this instance, a listening time of 180 seconds corresponds to 180 seconds of listening time). This approach came up multiple times during our interviews carried out before the common methodology was devised. As such, it was deemed that this approach should be integrated into the common methodology. Some music industry actors pushed for the inclusion of this model, however there remains very little research in the area.

For this study, there will be a special focus on the *numeris* approach as it best corresponds to the model most commonly used today. However, examining the *temporis* approach remains important (subject to feasibility), in an approach towards foresight.

V.4.2 MCPS *numeris* value

Under the MCPS *numeris* model, remuneration is calculated as the total number of streams of a track divided by the total number of streams, which is then multiplied by the total amount of royalties generated by the platform (1).

Under the MCPS *numeris* model, revenue per stream is the same for all streams, thus all streams have the same worth. It is calculated as the total amount of royalties generated by the platform over the assessed period, divided by the total number of streams (2).

Therefore, the MCPS *numeris* value for one stream is the same for all streams. It can be defined as a unit value, assigning the value of 1 for each stream made (3).

MCPS numeris value

$$(1)\quad MCPS\ numeris\ remuneration\ for\ track\ A = \frac{total\ n°\ of\ streams\ for\ track\ A}{total\ n°\ streams}\ x\ total\ amount\ of\ royalties\ generated\ by\ platform$$

$$(2)\quad MCPS\ numeris\ remuneration\ per\ stream = \frac{total\ amount\ of\ royalties\ generated\ by\ platform}{total\ n°\ streams}$$

$$(3)\quad MCPS\ numeris\ value\ for\ one\ stream = 1$$

V.4.3 UCPS *numeris* value

Under the UCPS *numeris* model, remuneration per track is calculated as the sum of royalties allocated by streams made for the track in question. User-allocated royalties are calculated as the user's total number of streams for a track divided by the user's total number of streams, the result of which is then multiplied by the amount of royalties generated by the user (4).

With the UCPS *numeris* model, the payout per stream is user-specific. It is calculated by dividing the revenue generated by the user by the user's total number of streams (5).

Thus, **the UCPS *numeris* value for one stream depends on the user's activity and the user-generated revenue.** It can be defined as a unitary value (one) for each stream, divided by the user's total number of streams over the given period, divided by the revenue generated by the user (6).

In the case whereby the user has not used the service over the given period, and thus their total number of streams is zero, royalties cannot be distributed according to the user's streaming behaviour. In this case, the revenue generated by the user is distributed equally amongst other users with the same type of subscription.

For multi-user subscriptions (i.e. family pack, duo), the user-centric approach will be applied in the same way for each user, and thus the subscription fees will be split equally amongst active users. Therefore, the UCPS calculation is exactly the same for each user, regardless of their subscription type.

UCPS *numeris* value

$$(4)\quad UCPS\ numeris\ remuneration\ for\ track\ A$$

$$= \sum_{X\ E\ users} \frac{user\ X's\ total\ n°\ of\ streams\ for\ track\ A}{user\ X's\ total\ n°\ of\ streams}\ x\ amount\ of\ royalties\ generated\ by\ user$$

$$(5)\quad UCPS\ numeris\ remuneration\ per\ stream\ per\ user\ X = \frac{royalties\ generated\ by\ user\ X}{user\ X's\ total\ number\ of\ streams}$$

$$(6)\quad UCPS\ numeris\ value\ for\ one\ stream = \frac{1}{\frac{user\ X's\ total\ number\ of\ streams}{royalties\ generated\ by\ user\ X}}$$

V.4.4 MCPS *temporis* value

The MCPS *temporis* value takes into account the duration of a stream for royalty distribution. Remuneration per track is calculated as the sum of the duration of streams for a track divided by the total sum of the duration of all streams. This amount is then multiplied by the total amount of royalties generated by the platform (7).

With the MCPS *temporis* model, the payout per stream depends on the duration of streams made. It is calculated as the stream duration divided by the total sum of the duration of all streams, which is then multiplied by the total amount of royalties generated by the platform over the assessed period (8).

Thus, **the MCPS *temporis* value for one stream depends only on its duration.** This means/as a consequence, it can be calculated by the duration of a stream in seconds (9).

MCPS *temporis* value

$$(7)\quad \text{MCPS temporis remuneration for track A} = \frac{\text{sum of the duration of streams of track A}}{\text{sum of the duration of all streams}} \times \text{total amount of royalties generated by the platform}$$

$$(8)\quad \text{MCPS temporis remuneration per stream} = \frac{\text{stream duration}}{\text{total sum of the duration of all streams}} \times \text{total amount of royalties generated by the platform}$$

$$(9)\quad \text{MCPS temporis value for one stream} = \text{stream duration}$$

V.4.5 UCPS *temporis* value

Under the UCPS *temporis* model, remuneration per track is calculated as the sum of royalties allocated by streams made for the track in question. User-allocated royalties are calculated as the total duration of streams for a track divided by the user's total duration of all streams, the result of which is multiplied by the amount revenue generated by the user (10).

With the UCPS *temporis* model, the payout per stream is user-specific and depends on the duration of each stream. It is calculated by the amount of revenue generated by the user divided by the user's total number of streams (11).

Thus, **the UCPS *temporis* value for one stream depends on the duration of the user's streams and the user-generated revenue.** For each stream, it can be calculated as the stream duration divided by the user's total duration of streams over the given period, the result of which is divided by the amount of royalties generated by the user (12).

In the case whereby the user has not used the service over the given period, revenue generated by the user is distributed equally amongst other users with the same type of subscription.

UCPS *temporis* value

$$(10)\quad \text{UCPS } \textit{temporis} \text{ remuneration for track A} = \sum_{X\ E\ users} \frac{\text{user X's total duration of streams for track A}}{\text{user X's total duration of streams}} \times \text{amount of royalties generated by user}$$

$$(11)\quad \text{UCPS temporis remuneration per stream per user X} = \frac{\text{user X's total duration of streams of track A}}{\text{user X's total duration of all streams}} \times \text{amount of royalties generated by user}$$

$$(12)\quad \text{UCPS temporis value for one stream} = \frac{\text{stream duration}}{\frac{\text{user X's total duration of streams}}{\text{amount of royalties generated by user}}}$$

V.5 Analysis

V.5.1 Descriptive data analysis

To support and reinforce the assessment of the impact of switching to a UCPS, the common methodology delivers indicators enabling the data used by streaming platforms for their calculations to be described statistically.

The descriptive data analysis features various indicators covering all areas of scope:

USERS	ARTISTS	RIGHTS-HOLDERS	TRACKS	STREAMS
number of distinct active users user distribution by subscription type user distribution by age group user distribution by consumption behaviour type user distribution by consumption behaviour type by age group total user subscription costs by consumption behaviour segment	number of distinct artists artist distribution by main music genre	number of distinct rights-holders rights-holders distribution by type	number of distinct tracks track distribution by country of production track distribution by track age segment track distribution by music genre track distribution by type of rights-holder	number of distinct streams number and list of countries of production number and list of distinct music genres stream distribution by distinct music genres stream distribution by age group stream distribution by subscription type stream distribution by type of consumer behaviour stream distribution by country of production stream distribution by track age segment stream distribution by music genre stream distribution amongst top-ranked tracks stream distribution amongst top-ranked artists stream distribution by type of rights-holder

V.5.2 Analysis of impacts when adopting a UCPS

Changes in royalty distribution were analysed for the rankings (according to monthly consumption) of tracks, artists and rights-holders, the distinction between predominant and independent actors, the country of production and the age category of tracks (back catalogue vs new releases). The total (in percentage points) and relative (in percentage) differences of the market shares between the MCPS and UCPS models (for the *numeris* and *temporis* values) are calculated for each analysis.

A **market concentration index** corresponding to the sum of the squares of the rights-holders' market shares is calculated for the top 100 rights-holders. This index measures market concentration; the higher it is, the more concentrated the market. By comparing the indices between the two models, we can define whether the market is relatively more or less concentrated when the UCPS is adopted.

Furthermore, **royalty distribution amongst users** is evaluated according to several parameters such as age, consumer behaviour type and streaming diversity.

Music genre promotion is assessed based on platforms' genre rankings according to changes in market shares for each genre. A prospective analysis relating to genre visibility and exposure in track and artist rankings is also carried out. It aims to compare the representativeness of music genres in rankings, depending on the method used to establish the latter, which could be modified with the implementation of the UCPS model.

An analysis of the impact of the UCPS on fraud cannot be carried out quantitatively. Such analysis requires fraudulent streaming to be present or integrated in the analysed data. However, in the majority of cases, these types of streams are excluded upstream from the data processing for royalty calculation. As there were no fraudulent data in the analysed database, this impact study cannot be carried out using this approach.

As fraudulent techniques are scalable, context-specific (i.e. to the remuneration model used) and are often a step ahead of prevention and detection operations, it is very difficult to assess how robust the models are regarding all types of fraud that currently exist and that will exist quantitatively without being based on assumptions or incorporating bias. Consequently, analysis in this area will remain qualitative.

The analysis of rankings and the importance of music recommendations and self-chosen streaming is complex. Exact definitions are required for analysis to take place (self-chosen streaming vs. recommendations, active vs. passive listening) and, to date, no specific description is the subject of a definition shared by all music industry stakeholders. In addition, platforms, each have their own way of working and depend on different confidential mechanisms. What's more, recommendation algorithms are context specific (i.e. remuneration model, consumption methods, etc.) and will constantly evolve over time according to new applications and new recommendation techniques. Therefore, the subject shall be approached qualitatively.

VI. Quantitative analysis of impact of adopting the UCPS

VI.1 Implementing the common methodology

Two online music platforms, Deezer and Spotify, agreed to take part in the CNM's study, however, under different conditions. Deezer executed the common methodology devised by the CNM and as described in section V of this document. Spotify executed their own methodology, in which the scope included all users, and the areas of focus and analysis parameters differed to those defined in the common methodology (evaluation of impact limited to the top four distributors, French-produced music, top ranking artists and top ranking tracks, cf. sections IV.3 and VI.3). Spotify's analysis corroborates the results presented below. However, Spotify provided us with a restricted sample of 100,000 Standard Premium users' (single user accounts) streaming behaviour over the year 2019, which enabled us to carry out certain analysis applying the common methodology: impact on the volume of royalties, rights-holders (distributors), top ranking artists, top ranking tracks….

An assessment of the impact of switching to the UCPS, according the *temporis* value calculation principle, was not carried out due to lack of available data within the study deadline.

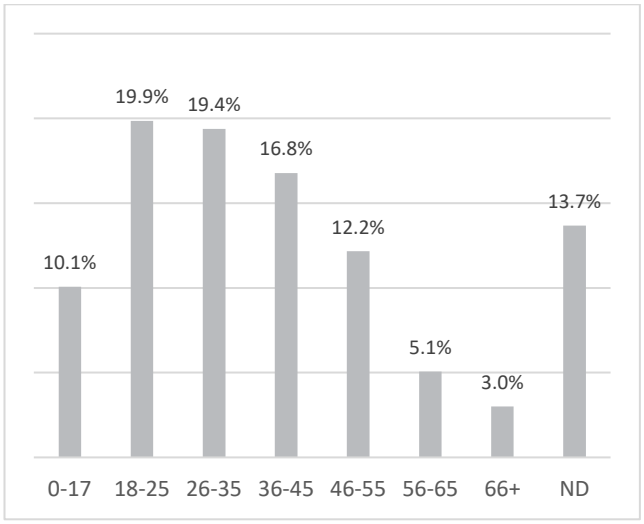
VI.2 Calculation audit procedures

The results and calculations made based on the common methodology have been audited. A sample of data and the associated results were delivered for reliability verification. Deloitte recalculated the results in order to compare them with results which the participants provided. From a granular perspective, the results calculated by Deloitte are identical. Results aggregation according to the study's area of focus (rights-holders, artists, tracks…) also revealed to be similar.

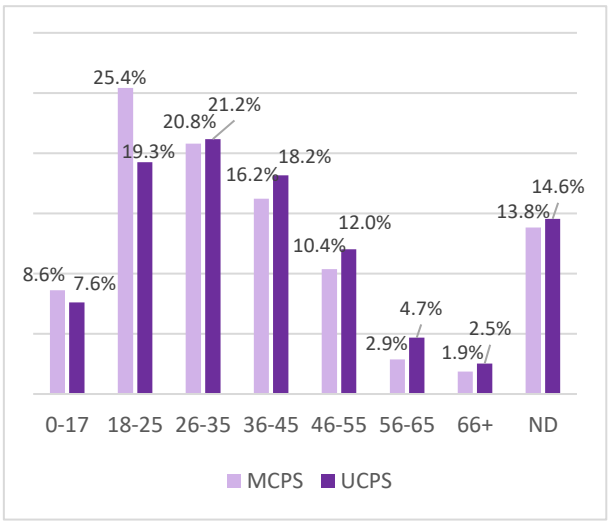
VI.3 Quantitative results

VI.3.1 Royalty distribution

Firstly, by definition of the model, the UCPS results in a reconciliation of royalty distribution per age group according to their representativeness on the platform. Under the UCPS model, royalties generated from a user's subscription fees are distributed according to what songs the user listens. Thus**, unlike the MCPS, heavy users are unable to inflate royalty amounts above the what they generate themselves in subscription fees.**



A – Distribution of users by age category (Deezer, 2019)

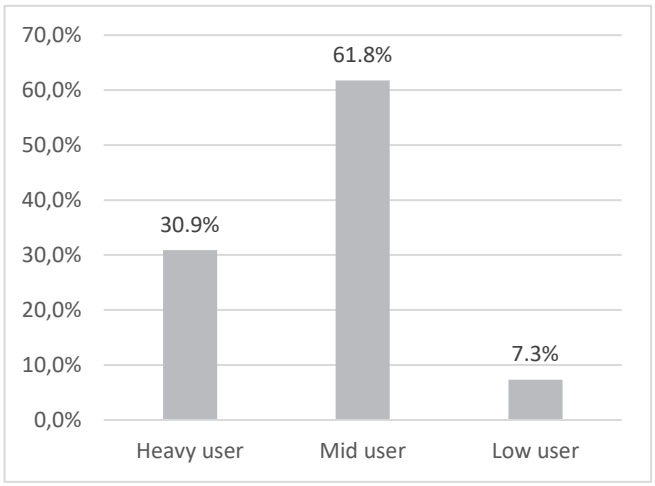


B – Royalty distribution by age category (Deezer, 2019)

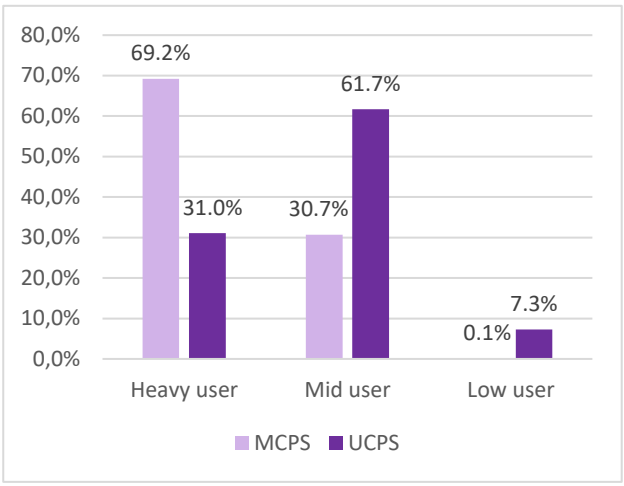
Disparities between the distribution of users by age group and the UCPS value associated with the same age groups can be explained by the underlying composition of the different types of subscriptions (premium, student, family, etc.) within the different age groups.

An analysis of consumer behaviour types also confirmed the same results. Heavy users (see VIII. Appendices), whose consumer behaviour is characterised as having a high music consumption, represent 31% of users and would only generate 31% of royalties with the UCPS, while under the MCPS, they would currently generate 69% of royalties. Three quarters of heavy users

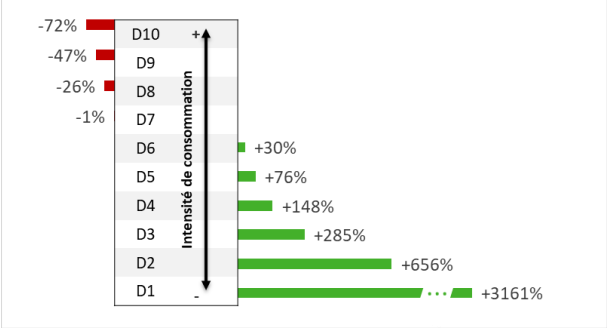
are between 18 and 55 years old (less than 10% between 0 and 17 years old). Average users (mid users) represent 60% to 70% of users depending on the age group studied (except the 18-25 age group where they represent 1 in 2 users).



D – User types (Deezer, 2019)



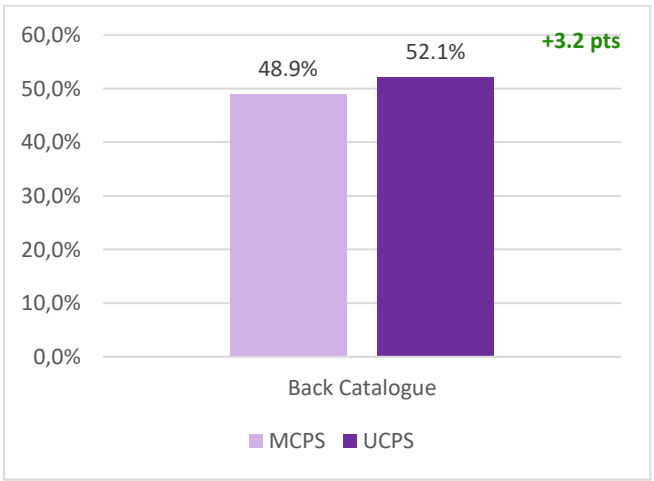
C – Royalty distribution by user type (Deezer, 2019)



E – Distribution change per decile (around 250,000 users per decile) according to consumer behaviour intensity (number of streams) when switching to the UCPS (Deezer, 2019)

10% of users with the lowest consumption would see the amount of royalties they generate increase by more than 3,000% with the UCPS, while 10% of users with the highest music consumption would lose an average of 72% of royalties which they currently generate under the MCPS. This amounts to 2.5 million users per month on average in 2019, or about 250,000 users per decile.

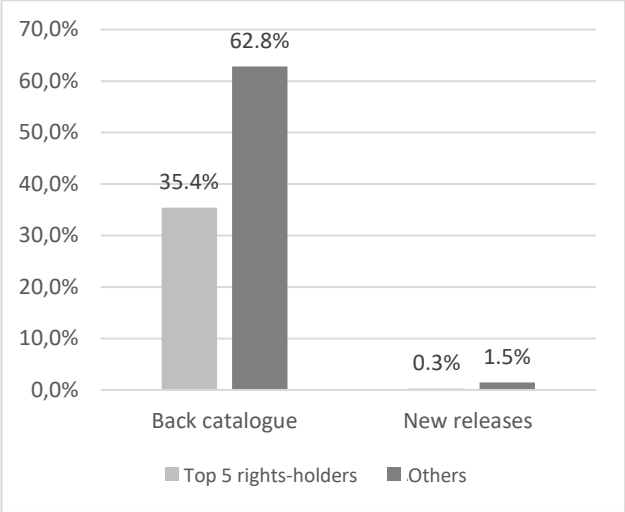
The UCPS would result in the back catalogue's market share being promoted. The back catalogue's market share of royalty distribution would increase by 3.2 points, i.e. a 6.6% increase in royalties for these tracks.



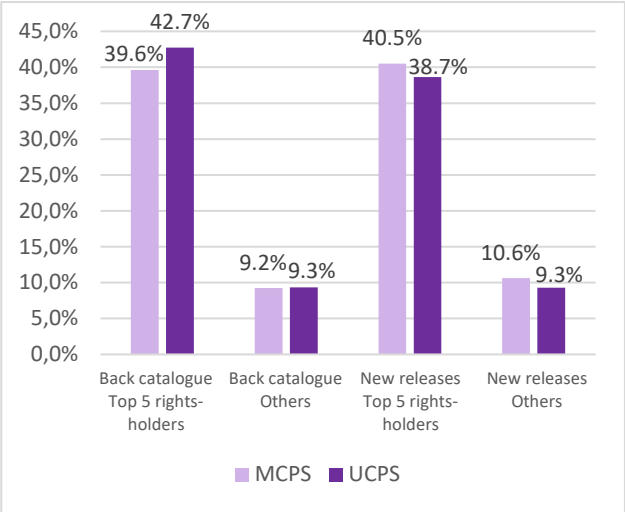
F - Back catalogue royalty share (Deezer, 2019)

It should be noted that the limitations around the definition of back catalogue (see footnote page 2) leads to an underestimation of the volume of back catalogue.

More specifically, those benefiting the most from this redistribution would be predominant rights-holders[4] (in our case, distributors). The latter are the only back catalogue category to see a significant increase under the UCPS. The share of back catalogue royalties held by predominant rights-holders would increase by 3.2 points, i.e. an increase of 7.8%.



G – Split of whole music catalogue available (Deezer, 2019)

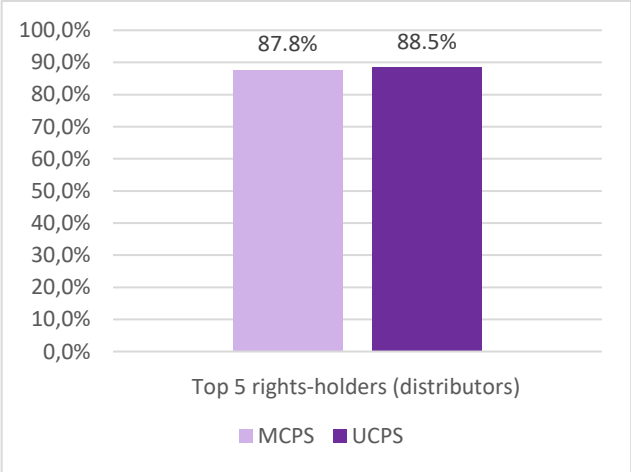


H – Royalty share by catalogue and rights-holders (Deezer, 2019)

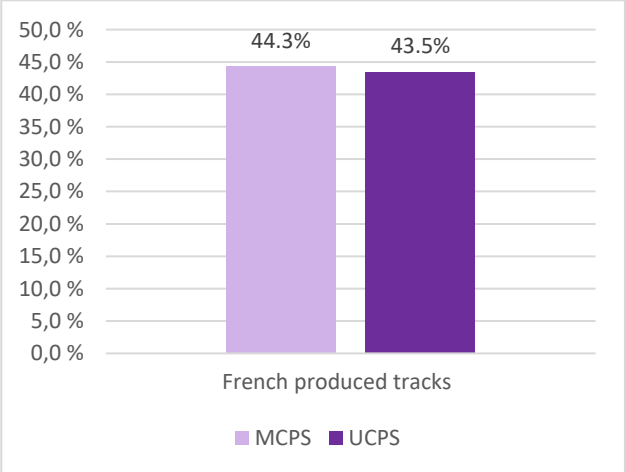
This would result in a **slight increase in the share of royalties for predominant rights-holders (distributors).** By going from 87.8% of the royalties share to 88.5%, i.e. a difference of 0.7 points, they would receive 0.8% more under the UCPS.

The concentration index calculated for the Top 100 rights-holders would be relatively higher with the UCPS. As a result, the market would be more concentrated with a small number of rights-holders under the UCPS.

Furthermore, with regard to French produced music, **switching to the UCPS would lead to a downward trend in the share of royalties distributed to French-produced music**. The model would provoke a -0.8 point change in the share of royalties, which would represent a 1.8% decrease in royalties for tracks produced in France.



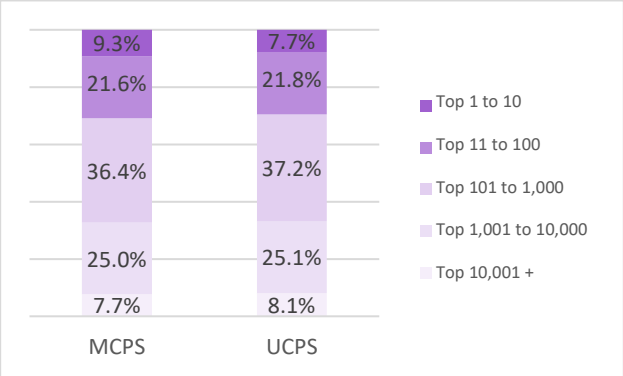
J – Royalties share for top 5 rights-holders/distributors (Deezer, 2019)



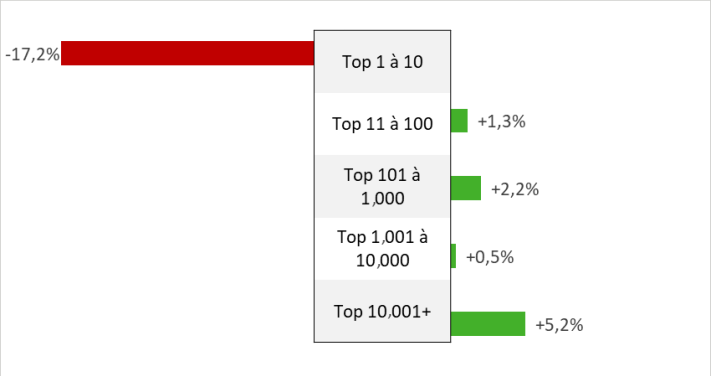
I – Royalties share for French produced track (Deezer, 2019)

[4] They correspond to the five biggest rights-holders in terms of volume of streams.

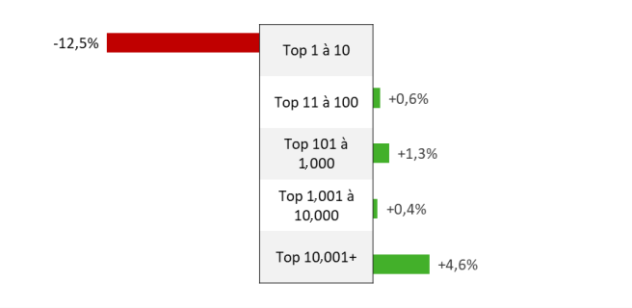
Within the artist rankings and for equivalent contractual conditions between artists, the UCPS would result in a reduction of royalties paid by 1.6 points, or top 10 artists could see a drop of 17.2% of their royalties. The following tiers, from the top 11 to the top 10,000, would benefit on average very slightly from this redistribution. The lowest ranked artists, Top 10,000 and over, would be the biggest beneficiaries with a 0.4-point evolution change in their share of royalties, equivalent to an average growth by 5.2% in their royalties.



L – Royalty distribution amongst top-ranked artists (Deezer, 2019)



K – Change in amount of royalties according to artist ranking under the UCPS (Deezer, 2019)



M – Change in amount of royalties according to artist ranking under the UCPS (Spotify, data sample, H1 2019))

To understand the financial impact of switching to the UCPS, a financial forecast of the calculated impact on artists was carried out on the streaming market concerned by this study. This extrapolation is an estimate intended to reflect the amounts associated with the calculated change**.**

For the year 2019, the Top 10 artists would suffer a drop in royalties of -17.2%, which on average equates to several hundreds of thousands of euros of annual royalties for rights-holders. *It should be noted that this decrease could however be put into perspective by the strong potential growth in revenues from streaming subscriptions*.

Outside of the Top 10,000 artists, **royalties distributed per artist to the entire chain would be on average less than €10.**

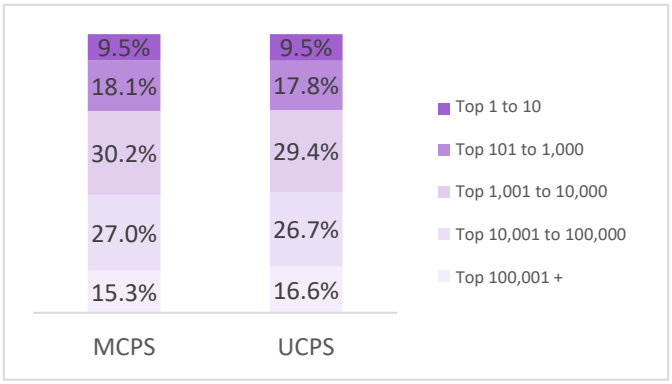
Top artists	MCPS distribution	UCPS distribution	Change (pt.)	Change (%)
Top 10	9,3 %	7.7 %	-1.60	-17.2 %
Top 11 to 100	21.6 %	21.8 %	0.28	1.3 %
Top 101 to 1,000	36.4 %	37.2 %	0.79	2.2 %
Top 1,001 to 10,000	25.0 %	25.1 %	0.12	0.5 %
Top 10,001+	7.7 %	8.1 %	0.40	5.2 %

Top artists	Change (€)*	Average financial variation in royalties paid to the entire chain (distributors, producers, artists) according to the artist approach
Top 10	-€4,574,223	-€457,422
Top 11 to 100	€810,407	€9,005
Top 101 to 1,000	€2,259,493	€2,511
Top 1,001 to 10,000	€348,351	€39
Top 10,001+	€1,155,972	< €10

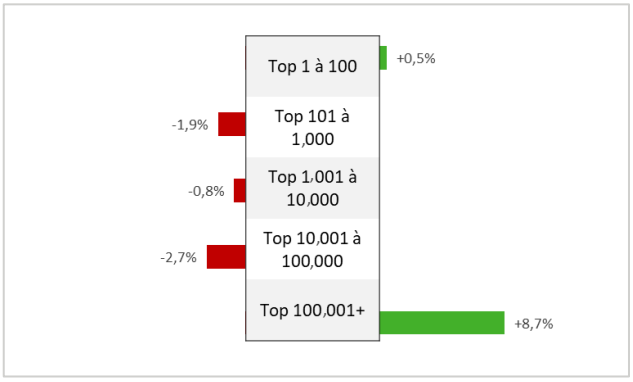
N – Financial forecast on impact of switching to the UCPS on top ranking artists (Deezer, 2019)

(*)Breakdown based on 2019 figures from audio streaming subscription sales market estimated at €285,763 excluding VAT (Source: SNEP). The average financial variation was calculated from the change in points between the MCPS share and the UCPS share, relative to the number of artists in the concerned bracket.

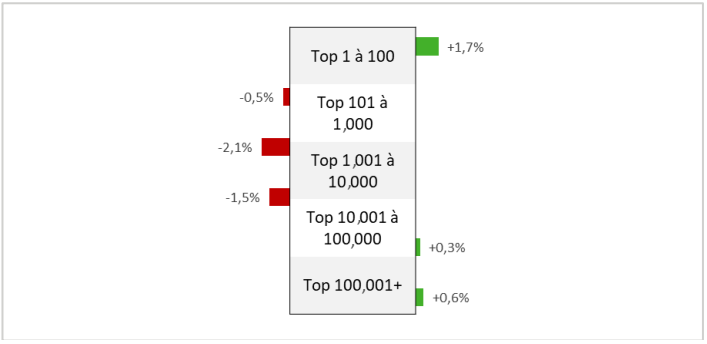
The impact of the UCPS is less pronounced amongst the highest ranking tracks. For the higher ranks, from the Top 1 to the Top 100,000, the impact of the UCPS is slight. Beyond the Top 100,000, tracks would receive on average a higher share of royalties with the UCPS. The difference observed between the analysis of the two platforms could be explained by the limitations and level of representation of Spotify's data sample (100,000 Standard Premium users). No financial projection has been made for the top-ranked tracks.



P – Royalty distribution amongst top-ranked tracks (Deezer, 2019)



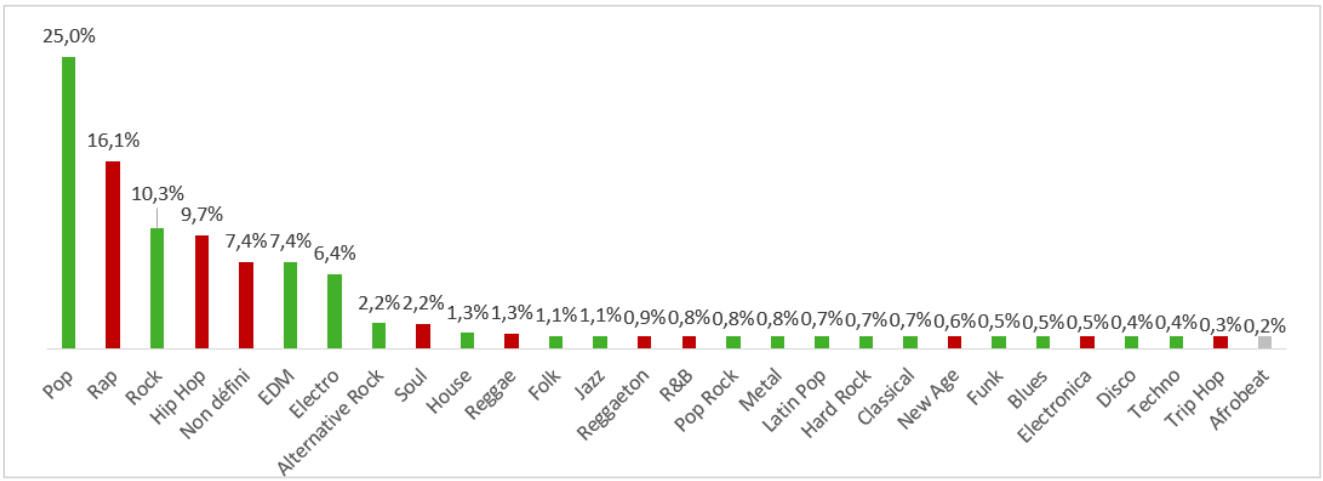
O – Change in royalties amount according to track ranking, under the UCPS (Deezer, 2019)



Q - Change in royalties amount according track ranking, under the UCPS (Spotify, random sample of 100,000 Standard Premium users, H1 2019)

VI.3.2 Music genre promotion

With regards to music genre promotion, the **genres with the lowest listening share are, for the most part, positively impacted** by this model (graph V). The music genres of tracks enjoying **a royalty increase of more than 5% thanks to the UCPS model would be classical music, hard rock, blues, disco, pop rock, rock, pop, jazz, folk, Latin pop and metal**. Classical music, hard rock and blues are the music genres with the biggest increase in royalties with 24%, 22% and 18% respectively, although their weight in streaming distribution is less.

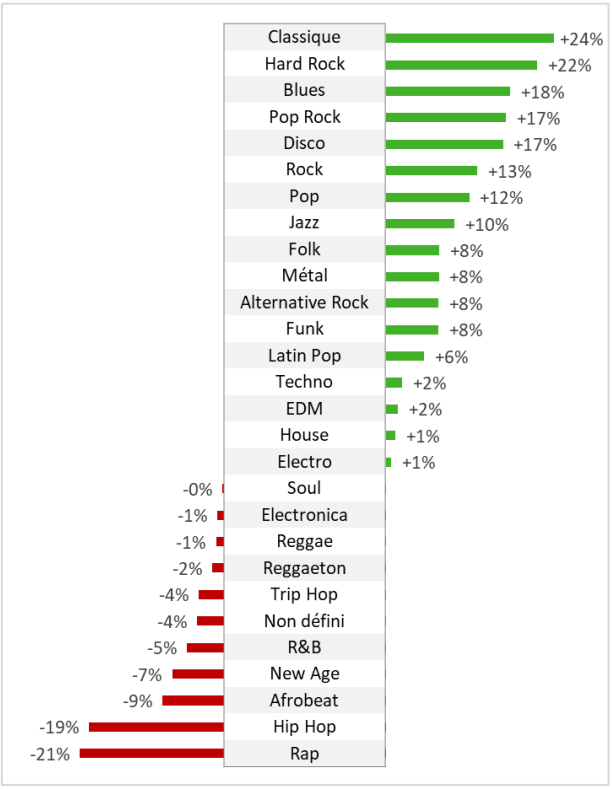


R - Répartition de la consommation par genre musical des titres (Deezer, 2019)

Amongst the most popular genres, there is a **positive impact on pop and rock (+12% and +13% respectively), to the detriment of rap and hip-hop (-21% and -19% respectively).** The musical genres of tracks impacted by a drop of **more than 5% in their royalties due to the UCPS model would be rap, hip hop, Afrobeat, new age, alternative rock and R&B.**

These impacts could be linked to the behaviour of intensive users (or heavy users - see VIII. Appendices) "sucking up" royalties, visible in the current model (see graph G). By definition, the UCPS limits the amount of royalties a user can generate to the cost of their subscription fee. Royalties currently paid to the most-listened music genres would be limited to the amount of royalties generated by consumers of those genres. This inherently implies increases for music genres listened to by less intensive users (or low users - see VIII. Appendices), moreover, if they have higher priced subscriptions. However, the distribution of consumer behaviour shows that for each user segment (from the most intensive - heavy users – to the least intensive - low users), we find the genres pop, rap and rock (independently of their order of classification) among the genres most listened to.

The share of French-produced music within genres would represent: (i) more than 70% of streams in rap and hip-hop (ii) less than 35% of streams in pop and rock (iii) less than 30% in niche genres such as classical, jazz and blues and (iv) less than 10% for metal and hard rock.



S – Change in amount of royalties per track music genre (Deezer, 2019), Deezer 's music genre categories

Although the temporis *approach was included in the common methodlogy, the evaluation of the impact according to the* temporis *value calculation principle (including the stream duration in royalty share assessment) was not carried out in this study for lack of data made available wihtin the study deadline. The analysis presented only includes the MCPS* numeris *and UCPS* numeris *calculation values.*

VII. Conclusion

The approach initiated allows us to draw various outcomes from the transition to UCPS:

Royalty distribution

Switching to the UCPS would make it possible to align revenue distribution and the respective weight of the different types of consumers (depending on the intensity of consumer behaviour calculated as the number of streams). As a result, it would limit the influence of heavy users' streaming behaviour on royalty distribution as identified in the current model with today 30.9% of users who generate 69.2% of total royalties, as apposed to 31.0% under the UCPS.

Adopting the UCPS would boost back catalogue (+ 6.6%), and the share of back catalogue royalties held by the predominant rights-holders would increase by 7.8%. Furthermore, the UCPS would lead to a **decrease in royalties redistributed to French produced tracks (-1.8%) and a slight increase in the share of predominant rights-holders' (distributors) royalties (+ 0.8%).** This would therefore lead to a greater market concentration for these rights-holders, as opposed to with the MCPS.

Under equivalent contractual conditions, the UCPS would greatly reduce the amount of royalties **top 10 ranking artists would receive on average (-17.2%),** would cause the middling ranks to stabilise with a minimal or no increase in the amount of royalties received by these artists, and **would allow less popular artists (beyond the Top 10,000) to benefit from an increase in their royalties (+ 5.2%).**

The impact according to track ranking would be less pronounced: the top 100,000 tracks would be slightly impacted – be it an increase or decrease, while beyond that, tracks would receive on average a larger share of royalties with the UCPS.

N.B: The results presented above are based on averages established on populations (e.g.: top ranking tiers). It should be noted that a change in model would extremely impact certain specialised stakeholders and they would require special support on the subject.

Musical diversity

Switching to the UCPS would have a great influence on promoting certain musical genres. Rap, hip-hop, Afrobeat, new age, alternative rock and R&B would be negatively impacted by this model. While classical music, hard rock, blues, disco, pop rock, rock, pop, jazz, folk, Latin pop and metal would be positively impacted. Genres that are currently trending and are heavily consumed, such as rap and hip-hop, are the genres that would lose the most from a switch to the UCPS, with a 21% and 19% reduction in royalties respectively. In contrast, less popular, niche music genres such as classical music, hard rock and blues would be promoted with an increase in royalties by 24%, 22% and 18% respectively.

By adopting the UCPS, the way in which artists and tracks are ranked in top artists and top tracks playlists could be called into question. A user-centric, not just consumer-centric, approach could be adopted for ranking top artists and top tracks. **For example, ranking tracks according to the number of unique listeners would showcase more musical genres within the top-ranked artists and top-ranked tracks.**

The impact of music recommendations

The impact of music recommendation tools on revenue distribution under a UCPS must also be assessed: some rights-holders' representatives have expressed concerns over recommendation algorithms' potential to influence streaming behaviour and their lack of transparency. **The quantitative analysis of the value distribution between recommended and self-chosen listening is complex and requires a common and shared definition**. The platforms point out that their primary objective is to satisfy as many users as possible and thus would have little interest in manipulating recommendation algorithms. They are committed to following the codes of best practice against streaming manipulation.

Implementation and maintenance costs

The issue surrounding implementation costs remains to be clarified. In the event that the data exchange interfaces remain unchanged, platforms would be responsible for costs incurred when developing the model. **The associated costs estimated by two platforms participating in this study differ greatly, thus a more accurate estimation is required.** These costs may not be absorbable for smaller platforms and could be passed on throughout the whole value chain. The rights-holders (distributors, producers, collective management organisations) could also bear the costs of verifying the reports submitted by the platforms (complex operations linked to the weightings carried out at user level for UCPS calculations).

Deezer states that (i) their current system would already cover the technical costs necessary for the transition to the user-centric model, and (ii) the development costs would have been covered by four part-time engineers over a six-month period (i.e. around 240 man-days). Spotify estimates that the impacts on their platform would lead to an 2% to 3% increase in operating costs.

The fight against fraud

The UCPS model would help reduce the impact of one type of existing fraud, whereby click farms are tasked with making the maximum amount of streams for targeted songs and artists. Switching to the UCPS could cause new fraud techniques to emerge, such as targeting low or inactive users or hacking unused Family Plan sub-accounts. The fight against fraud is one of the main challenges of music streaming, platforms must remain incredibly vigilant to detect fraudulent streaming and apply greater transparency.

VIII. Appendices

VIII.1 Data and definitions used in the common methodology

User – User name
Definition: The User's user name is a unique identifier and guarantees to identify the User and their music consumption (or rather, the number of streams generated by the User).

The user name may exist in different forms, but must comply with the rule of uniqueness.

User – Age
Definition: The User's age is declared by the User when they create their account or can be updated *a posteriori.* The age value is numerical but can also not be defined.

User – Subscription type
Definition: The subscription type corresponds to the description of the service offer to which the User has subscribed. Each subscription type has different parameters, including the subscription fee. If there are sub-offers (or services), these will be grouped together within usual generic categories (standard, duo, family, student, discovery, etc.).

User – Number of users linked to a subscription
Definition: Number of User(s) sharing the subscription. Parameter necessary in the specific case of group offers (e.g.: family account that can have up to six sub-accounts).

User – Subscription fee
Definition: The User's subscription fee corresponds to the price (including VAT) paid by the User to access the online music service.

User – Age category
Definition: A User's age category is defined as follows:

- any User who has declared their age as between 0 and 17 years old belongs to the "0-17" age category;
- any User who has declared their age as between 18 and 25 years old belongs to the "18-25" age category;
- any User who has declared their age as between 26 and 35 years old belongs to the "26-35" age category;
- any User who has declared their age as between 36 and 45 years old belongs to the "36-45" age category;
- any User who has declared their age as between 46 and 55 years old belongs to the "46-55" age category;
- any User who has declared their age as between 56 and 65 years old belongs to the "56+" age category;
- any User who has declared their age as 66 years old or more belongs to the "66+" age category;
- any User who has not declared their age belongs to the "n/a" age category.

User – Account activity
Definition: The activity indicator defines whether the User is considered as active or not for the month assessed:

- if the User has not streamed any music for more than 30 seconds in the month, they are considered as **inactive**;
- otherwise, the User is considered as **active**.

If the data used includes only active Users as defined above and only streams that last more than 30 seconds, the activity indicator is not necessary.

User – Number of streams
Definition: The number of streams made by a User represents the number of times the User listened to a track for a duration of more than 30 consecutive seconds.

User – Consumer behaviour type
Definition: A User's consumption behaviour type is defined based on different tiers of the number of monthly streams per User. Identifying the 1st and 3rd quartile of the number of monthly streams per User enables the following segments to be defined:

- ***heavy user:***
  3rd quartile value
  < Number of streams generated by User X

- ***mid user***
  1st Quartile value
  < Number of streams generated by User X
  < 3rd quartile value

- ***low user***
  Number of streams generated by User X
  < 1st quartile value

- ***inactive user***
  Number of streams generated by User X = 0

The User segment definitions are based on tiers defined relatively according to general consumption, this ensures that current consumption and any possible change is always defined mathematically.

N.B.: User segments are demarcated by statistical levels depending on consumption. Adopting this definition ensures that user segmentation is defined precisely and mathematically, and will be constantly re-evaluated in relation to overall consumption.

User – Total streaming duration
Definition: The total streaming duration is defined as the sum of the duration of all streams lasting more than 30 seconds.

Stream – Stream identifier
Definition: A stream's identifier is unique and guarantees to identify each stream.

The identifier may exist in different forms, but must comply with the rule of uniqueness.

Stream – User name
Definition: The user name of the User behind the stream.

Stream – Track identifier
Definition: The unique identifier of a track which has been listened to.

Stream – Artist identifier
Definition: Unique identifier of the artist responsible for the track that has been streamed.

Stream – Rights-holder identifier
Definition: Unique identifier of the rights-holder who holds the copyright to the track that has been streamed.

Stream – Date streamed
Definition: The date streamed corresponds to the date (day, month, year) in which the stream was made.

Stream – Stream duration
Definition: Stream duration corresponds to the duration in seconds of the time spent by the User listening to the track in question.

Stream – MCPS *numeris* value
Definition: The MCPS *numeris* value for a stream is defined in section V.4.2.

Stream – UCPS *numeris* value
Definition: The UCPS *numeris* value for a stream is defined in section V.4.3.

Stream – MCPS *temporis* value
Definition: The MCPS *temporis* value for a stream is defined in section V.4.4.

Stream – UCPS *temporis* value
Definition: The UCPS *temporis* value for a stream is defined in section V.4.5.

Artist – Artist identifier
Definition: An artist's identifier is unique and guarantees the identification of the artist and their tracks. The identifier may exist in different forms, but must comply with the rule of uniqueness.

Artist – Number of unique listeners
Definition: The number of unique listeners corresponds to the sum of listeners who listened to one of the artist's track at least once.

Artist – Total number of streams
Definition: An artist's total number of streams is defined as the total number of streams of all tracks by the artist over the assessed period. One stream equates to a listening time of 30 continuous seconds made by one User.

Artist – MCPS *numeris* value
Definition: The *numeris* value assigned to an artist, calculated from the Market-Centric Payment System, is calculated as the sum of all MCPS *numeris* values for streams linked to the artist.

Artist – UCPS numeris value
Definition: The *numeris* value assigned to an artist, calculated from the User-Centric Payment System, is calculated as the sum of all UCPS *numeris* values for streams linked to the artist.

Artist - MCPS temporis value
Definition: The *temporis* value assigned to an artist, calculated from the Market-Centric Payment System, is calculated as the sum of all MCPS *temporis* values for streams linked to the artist.

Artist - UCPS temporis value
Definition The *temporis* value assigned to an artist, calculated from the User-Centric Payment System, is calculated as the sum of all UCPS *temporis* values for streams linked to the artist.

Rights-holder – Identifier
Definition: A rights-holder identifier is unique and guarantees the identification of the rights-holder (in the case of this study: the distributer) and their music tracks. The identifier may exist in different forms, but must comply with the rule of uniqueness.

Rights-holder – Type of rights-holder
Definition: The type of rights-holder refers to the distinction between the group of five predominant rights-holders and the other rights-holders as distributors. Thus each beneficiary will be defined in a binary way (1 = yes, 0 = no), as to whether or not they belong to this group.

Rights-holder – MCPS *numeris* value
Definition: The *numeris* value assigned to a rights-holder, calculated from the Market-Centric Payment System, is calculated as the sum of all MCPS *numeris* values for streams linked to the rights-holder.

Rights-holder – UCPS *numeris* value
Definition: The *numeris* value assigned to a rights-holder, calculated from the User-Centric Payment System, is calculated as the sum of all UCPS *numeris* values for streams linked to the rights-holder.

Rights-holder - MCPS *temporis* value
Definition: The *temporis* value assigned to a rights-holder, calculated from the Market-Centric Payment System, is calculated at the sum of all MCPS *temporis* values for streams linked to the rights-holder.

Rights-holder - UCPS temporis value
Definition: The *temporis* value assigned to a rights-holder, calculated from the User-Centric Payment System, is calculated at the sum of all UCPS *temporis* values for streams linked to the rights-holder.

Track – Track identifier
Definition: A track identifier is unique and guarantees the identification of the track and each associate stream. The identifier may exist in different forms, but must comply with the rule of uniqueness.

Track – Artist identifier
Definition: The artist identifier of a track corresponds to the identifier of the artist who performs the song. For multi-artist tracks:

- if the track is an artist collaboration, the main artist is identified as the one who publishes the track on their album;
- if the track features two major artists on a track that does not feature on an album (e.g.: a single), the main artist is identified as the artist who generated the most streams during the month assessed.

Track – Rights-holder identifier
Definition: The identifier of the rights-holder of the track which corresponds to the authorised distributor who holds the copyrights to the track.

Track – Code ISRC
Definition: The ISRC code (International Standard Recording Code) is a code assigned to each recording. It includes information concerning the country of recording and the producer.

Track – Country of production

Definition: A track's country of recording is identified via the country code in the ISRC code of the track, equivalent to the country of registration. The country code respects international two-letter nomenclature (ISO 3166-1 alpha-2).

Track – Release date

Definition: A track's release date corresponds to the date on which the track was released on the online music platform.

Track – Track age category

Definition: The purpose of dividing the age of a track into segments is to identify new tracks (frontline) and tracks that are part of the back catalogue. If the track was released in the last 18 months from the month in which data processing was carried out, then the track is considered to be new. Beyond these 18 months, the track is considered to belong to the back catalogue.

Track – Music genre

Definition: A track's music genre corresponds to one or more musical aesthetics to which the track is attached. The definition and classification of genres is specific to each platform (see section 3). If a track is not qualified or qualifiable, then it should be assigned the category "unknown genre" (an impact analysis will not be feasible on this category).

Recording data: One or more music genres can be assigned to a track. When recording tracks by music genre, the track is counted for each music genre it is assigned to.

Track – Number of streams

Definition: The number of streams for a track is defined as the total number of times a track was streamed by Users during the assessed period.

Track – MCPS numeris value

Definition: The *numeris* value assigned to tracks, calculated from the Market-Centric Payment System, is calculated as the sum of all MCPS *numeris* values for streams linked to the track.

Track – UCPS numeris value

Definition: The *numeris* value assigned to tracks, calculated from the User-Centric Payment System, is calculated as the sum of all UCPS *numeris* values for streams linked to the track

Track - MCPS *temporis* value

Definition: The *temporis* value assigned to tracks, calculated from the Market-Centric Payment System, is calculated as the sum of all MCPS *temporis* values for streams linked to the track.

Track - UCPS *temporis* value

Definition: The *temporis* value assigned to tracks, calculated from the User-Centric Payment System, is calculated as the sum of all MUCPS *temporis* values for streams linked to the track.