

# Music360: Modeling the Value of Music

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## Abstract

Music played in shops, bars, restaurants, and other venues contributes to their revenue, increases the well-being of people, and is an essential source of revenue for intellectual property rights (IPR) holders of the music. However, these venues that reproduce music lack information about the value the music provides to their business, music Organizations (CMOs) lack information for accurate royalty distribution, creators lack information about the usage of their music, and policymakers are in the dark about the social and economic value of music. We aim to create a model-driven platform that supports the transparent delivery of music usage and value provided to stakeholders in the EU music ecosystem, including, creators, venues, and policymakers. As a result, creators will be able to identify new business opportunities and have a clear vision of royalties distribution, venues will be able to assess the value of music for their revenue, and policymakers gain insight into the impact of different events in the music ecosystem.

## Keywords

Music Value, Model-Driven Engineering, Property Rights,

## 1. Introduction

The Music360 project aims to create a fair and sustainable European music ecosystem by developing a platform that collects data about music usage on a fine-grained level and makes this data available to stakeholders while respecting confidentiality requirements on this data. The platform will address challenges related to a fair distribution of neighboring and author rights, developing a method to value music, and making information concerning the value of music available widely and transparently.

Music360 focuses on the professional use of background music in shops, bars, restaurants, radio & television stations, medical facilities, and other venues that play music to improve the well-being of customers, create a brand identity, and eventually increase revenue. Background music may be live music, music broadcast by radio, streamed music, or music distributed through

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other means such as tape or disc. Together with live performances, it accounts for 28% of the royalty collection for lyricists and composers, more than streaming, which accounts for 21%[1].

The project is multidisciplinary, combining methods from computer science, marketing, and social science research. The expected impacts include an open innovation ecosystem for music in the EU, evidence-based decision-making, a more profitable and diverse EU music ecosystem, and resilience to disruptions.

Music360 proposes that it is possible to define the appropriate conceptualization of different elements that determine the real value of music for different stakeholders and venues. These concepts can be represented by using model-driven engineering approaches[2] based on reference metamodel, modeling tools, and ontologies[3] to count on common terminologies that facilitate the interoperability of information among the different actors in the music value chain.

The use of model-driven technologies also permits the generation of a common repository to support the Music360 platform that collects the real reproduction of music from different venues by means of IoT devices that identify the music fingerprints[4] in live music and public venues, and other real-time analyses for streaming and social networks. Thus, the Music360 platform would permit a transparent evaluation of the actual reproduction of music to make a fair distribution of the authors-rights. The project will use living labs[5] in different countries to test and validate the Music360 platform application in measuring the real music value

## 2. Background and Project Objectives

While playing background music, venues are obliged to pay a fee for making music public to artists (called neighboring rights on recordings[6]) and to text and songwriters, and composers (called author rights on works). These fees are collected, often mandated by national intellectual property laws, by Collective Management Organizations (CMOs). CMOs operate on behalf of all right owners (artists, text and songwriters, and composers) in a country and distribute the collected money to these right owners[7]. CMOs may differ in the intellectual property right (IPR) they collect. Since the decrease in the sales of CD's and MP3's, neighboring and author rights are an important source of revenue for right owners.

There are two problems with this model. First, there should be a criterion for how to divide the collected money among the eligible right owners. Currently, this is distributed using reference data such as the top twenty radio stations in a country. For each recording (and related to that, the works), the number of seconds a recording was played during a time period is counted. That number determines the amount of money right owners receive; the money is distributed proportionally. Because only the top twenty radio stations are considered, this leads to unfair distribution of money, as local artists who are played in local restaurants, bars, and shops, but are not on the radio, do not receive money. Thus, the music economy shows a behavior where large labels and superstar artists collect the most royalties, while there is a very long tail of creative entities who barely can make a living with the music they make.

For this reason, it is important to create a fair distribution of neighboring and author rights based on the actual use of music. However, the identification of the actual use of music presents a set of challenges that involve the identification of the music played in live and public venues[4], and the analysis of different music digital sources, such as social networks or digital content

related to several multimedia applications[8].

Moreover, there are concerns about what the law calls *fair compensation* for the use of music[9][10]. In the past, many lawsuits took place about what a reasonable fee actually is. Music360 advocates that this fee should be based on the actual value of the music played in a venue. For instance, a shop pays a fee based on its square meters (which is very inaccurate in relation to the number of people listening to the music). A better metric would be the contribution of music to the positive decision of the customer to buy something or even the increase in revenue. Moreover, there are different contexts and application domains that can vary the actual value of the music played, for instance, the positive effect that the music can have in medical treatments by reducing the need for analgesic or other pain-relieving drugs, at the same time that can improve the patient's wellbeing, which might directly impact in their recovery time[11].

Thus, it is necessary to develop a method to value music, such that is used to motivate a 'fair compensation' for the use of music. We argue that a fair distribution of collected fees and fair compensation contributes to a more resilient music ecosystem and contributes to the preservation of cultural heritage because all creative entities receive the fee they are entitled to, based on the value they add to venues.

Once we understand the value of music from multiple stakeholder perspectives (venues, creative entities, society) at a fine-grained level (e.g. per recording/work or per shop), the next step is to make that information widely available, for example to policymakers. Policymakers often lack insight into the effect of new legislation on both music creators and users. Policymakers at the national and EU level need more data too, as the importance of cultural heritage at the local level is not measured. Also, during the Covid-19 pandemic almost all venues closed and royalties from background music significantly dropped. Without data about which music is created, distributed, or used where policymakers were in the dark about what the impact of this on musical heritage was. Therefore, it is necessary to count on the information concerning the value of music available widely and transparently respecting confidentiality requirements.

## **2.1. Music360 objectives**

Music360 main goal is to create a digital platform that collects data about the value of music played in venues for different stakeholders using fingerprinting technology. This data is combined with information held by CMOs to make this transparently available to stakeholders in the EU music ecosystem, including, creators, venues, and policymakers. Thus creators will understand the value of music and be able to identify new business opportunities. Venues will be able to assess the value of music for their revenue. Policymakers will be able to gain insight into the impact of events in the music ecosystem.

The main objectives of the Music360 project are the following:

1. Conceptualization and measurement of the monetary and non-monetary value of music.
2. Development of a platform that collects data about music usage on a fine-grained level and makes this data available to stakeholders, while respecting confidentiality requirements on this data.
3. Addressing challenges related to a fair distribution of neighboring and author rights.

4. Developing a method to value music and making information concerning the value of music available widely and transparently
5. Testing and validating the platform's solutions using living labs in different countries.
6. Creating an open innovation ecosystem for music in the EU, evidence-based decision-making, a more profitable and diverse EU music ecosystem, and resilience to disruptions.

### 3. Relevance for CAiSE

The Music360 project has several relevant aspects that can be interesting to present and discuss during the CAiSE conference:

1. **Open Source Software:** The project aims to make the final versions of all generated software available to society with open-source licensing when no dependencies exist. This approach promotes the use of the Music360 platform by reducing potential licensing limitations and facilitating the transparent evaluation of the value of Music in the European music ecosystem.
2. **Model-Driven Platform Development:** The project aims to develop a platform that collects data about music usage on a fine-grained level and makes this data available to stakeholders while respecting confidentiality requirements on this data. This platform development involves the use of Model-Driven Engineering technologies to properly conceptualize the value of music
3. **Privacy and Confidentiality:** The project aims to design the protection of confidential data as part of the project. The platform will use an identity management system that allows a user to answer queries without violating the confidentiality of the data of others.
4. **Data Management:** The project distinguishes different kinds of data and aims to improve data quality by using machine learning techniques that identify patterns in existing data that will be used to assess the quality of new data.
5. **Interoperability:** The project aims to design a distributed architecture that respects the various authorities who own data sources but at the same time makes it available to the Music360 platform.

### 4. Project Details

The Music 360 project started in March 2023 and has a 36 months duration. The first version of the conceptual model to measure the value of music is expected to be available in October 2023. The following partners participate in the development of the Music360 Project:

1. STICHTING VU, Netherlands
2. The Value Engineers B.V., Netherlands
3. STICHTING TER EXPLOITATIE VAN NABURIGE RECHTEN, Netherlands
4. Vereniging Buma, Netherlands
5. UNIVERSITAT POLITECNICA DE VALENCIA, Spain
6. BMAT LICENSING SL, Spain

7. GDA - COOPERATIVA DE GESTAO DOS DIREITOS DOS ARTI, Portugal
8. GT Musiikkiluvat Ltd, Finland
9. Irish Music Rights Organisation Company Limited by Guar, Ireland
10. AEPO-ARTIS, Belgium

## 5. Conclusions and Expected Impact

Overall, the Music360 project aims to create a fair and sustainable European music ecosystem that benefits all stakeholders involved in the creation, distribution, and use of music.

To properly address the different project challenges a multidisciplinary approach that combines methods from computer science, marketing, and social science research will be applied to make the value of music available widely and transparently.

The project's living labs in different countries will be crucial in testing and validating the platform's solutions and ensuring that the platform meets the needs of stakeholders in different contexts.

The project's focus is on ethical standards and compliance with applicable international, EU, and national laws, including GDPR and national data protection laws. This is crucial to ensure that the project's outcomes and impacts are achieved in an ethical and responsible manner.

Finally, some of the expected impacts of the Music360 project are:

1. Creation of an open innovation ecosystem for music in the EU.
2. Evidence-based decision-making for stakeholders such as creators, users, and policymakers.
3. A more resilient, profitable, and diverse EU music ecosystem that can withstand disruptions.
4. Increased transparency in the creation, distribution of royalties, and capture of value from music for creators, Collective Management Organizations (CMOs), users, and policymakers.
5. Evidence-based decision-making about new business opportunities for stakeholders.
6. Preservation of musical heritage by increasing the earnings of creators in the long tail of the royalty distribution.
7. Contribution to a much higher success rate for business models of ecosystems beyond the music sector alone by means of measuring the real value of music in different contexts, such as the reduction of hospital stays through the use of music in healthcare.
8. Better data quality for participating CMOs in Music360 and the creators they represent.

Thus Music360 has the potential to transform the music industry in Europe.

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